

Nicor Gas Proposed Amended Energy Efficiency Plan

January 2026 to December 2029



Energy
Efficiency
Program

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Table 1 Glossary of Terms

Term	Acronym	Definition
Administrative Costs		A cost that may be incurred by a Program Administrator, contractor or subcontractor that is not easily attributable to a specific Program or other cost categories, but benefits all functions of the Energy Efficiency Portfolio
American Society of Heating, Refrigerating, and Air-Conditioning Engineers	ASHRAE	A leading professional organization which develops equipment standards and technical resources.

Term	Acronym	Definition
Annual Fuel Utilization Efficiency	AFUE	A rating that reflects how efficiently a gas furnace or boiler converts fuel to energy. A larger number is more efficient.
Avoided Cost		The costs a utility would incur to supply the next increment of energy.
Commonwealth Edison Company	ComEd	A local electricity provider serving most of Nicor Gas' service territory.
Combined Heat and Power	CHP	A power system designed to produce both heat and electricity from single heat/fuel source.
Department of Commerce and Economic Opportunity	The Department	Illinois State agency.
Discount Rate		The rate by which future values are converted to today's dollars.
Emerging Technology	ETP	Those activities related to exploring and testing new technologies that are not yet widely deployed, demonstrating market readiness, and establishing pilot projects to identify customer and market acceptance.
Energy Efficiency	EE	The process of reducing energy consumption while maintaining or improving productivity.
Energy Efficiency Plan	EEP	Nicor Gas' proposed energy efficiency portfolio for 2026 through 2029.
Evaluation, Measurement & Verification	EM&V	The process of confirming that energy efficiency installations, as well as calculated energy savings, are at the levels reported.
Energy and Environmental Economics Calculator	E3	A firm based in California that created the E3 Calculator.
energyENGINE	energyENGINE	Information system Nicor Gas uses to produce reports and manage EE programs and program achievements.
Free Ridership		A factor to account for those customers who participate in an energy efficiency program but would have implemented measures even in the absence of the program.
Gallon per minute	GPM	The flow rate of water through a water fixture such as faucet aerator or showerhead.
Gas Technology Institute	GTI	A non-profit natural gas research and development organization.
Gross Therm Savings		Natural gas savings from all program participants, regardless of program influence.
Heating, Ventilation, and Air Conditioning	HVAC	The collection of space heating and cooling equipment.
Illinois Commerce Commission	Commission or ICC	Illinois regulatory agency.
Illinois Energy Efficiency Stakeholder Advisory Group	SAG	A group of parties interested in energy efficiency in Illinois that provides advice on energy efficiency plans and related issues.
Illinois Housing Weatherization Assistance Program	IHWAP	The Department's weatherization assistance program.

Term	Acronym	Definition
Impact Evaluation		An evaluation which reviews program achievements to ensure that deemed savings and engineering assumptions are accurate based on actual program participants.
Implementation contractor	IC	The third-party or parties hired to administer certain energy efficiency delivery activities.
Incremental Costs		The price difference between a standard product and an energy efficiency product.
Installation Contractor	IC	The third-party or parties hired to install energy efficiency measures in homes or businesses.
Load Shape		The time-of-use pattern of customer or equipment energy use. This pattern can be over 24 hours or over a year (8,760 hours).
Income-Eligible	IE	Income-eligible or low-income customer is defined as a residential customer of a participating utility with a household income at or below 80% of area median income (AMI).
Moderate Income	IE	Income-eligible customer is defined as a residential customer of a participating utility with a household income above 80% of area median income (AMI) and below 100% of area median income (AMI).
Measure Life		An estimate of the number of years that a piece of equipment or service will perform if properly maintained.
Midwest Energy Efficiency Alliance	MEEA	A collaborative network of utilities, non-profits, policymakers, manufacturers, and other energy professionals who advance energy efficiency in the Midwest.
Multi-family	MF	Residential dwelling with three units or more.
Net therm Savings		Natural gas savings adjusted for NTG.
Net-To-Gross	NTG	A factor representing the percent of gross energy savings that are attributable to the utility's energy efficiency program efforts. This factor accounts for both free-ridership and spillover.
Participant		A customer who installs energy efficiency measures in return for an incentive or receives energy efficiency services from the Nicor Gas Energy Efficiency Program.
Portfolio Management		Internal and external administration resources required to manage the overall portfolio.
Process Evaluation		An evaluation which assesses how a program operates and the processes it uses; conducted to help programs run as smoothly and efficiently as possible.
Program Year	PY	The 12 months over which the program is offered. This means the year in which measures are installed and incentives are paid. Historically, PY covered periods from June 1 through May 31. Since legislation in

Term	Acronym	Definition
		2016, the Nicor Gas Energy Efficiency Program currently operates on a calendar year.
Program Administrator Cost	PAC	A cost-effectiveness test that assesses the benefits and costs of an efficiency measure, product, or program based on the costs to the program administrator or utility.
Participant Cost	PC	A cost-effectiveness test that assesses the benefits and costs of an efficiency measure, product, or program based on the costs to the program participants.
Request for Proposal	RFP	The competitive bidding process by which third-parties will apply for certain external administrative and delivery roles.
Rider 29		The tariff rider that allowed Nicor Gas to begin to recover costs prior to 2010.
Rider 30		The tariff rider that allowed Nicor Gas to recover costs associated with the energy efficiency programs.
Rate Impact Measure	RIM	A cost-effectiveness test that assesses the Energy Efficiency programs potential impact on the overall utility rates.
Section 8-104		The section of the Public Utilities Act that requires gas utilities to provide energy efficiency programs.
Single Family		Residential dwelling with two units or less.
Spillover		Additional savings attributed to a program above and beyond those from the specific measures and participants tracked in the program database.
Technical Reference Manual	TRM	A statewide document with a consistent set of documentation regarding the assumptions about prescriptive energy savings measures.
Total Resource Cost	TRC	A cost-effectiveness test that assesses the benefits and costs of an efficiency measure, product, or program based on the total cost to both the participant and the utility.
United States Department of Energy	DOE	Federal energy agency.
Utility Gas Supply Costs		The value paid by Nicor Gas to purchase its next incremental therm of natural gas.
Utility Avoided Cost	UAC	Utility costs to deliver marginal unit of energy. The Utility Avoided cost includes commodity cost, transportation and distribution costs, greenhouse gas costs and additional quantifiable societal benefits.
Weatherization	Wx	Installation of insulation to prevent or reduce air leakage from a residential or commercial dwelling.

1 Executive Summary

1.1 Introduction to the Plan

Nicor Gas (or Company) is pleased to present its 2026-2029 proposed Amended Energy Efficiency Plan ("proposed Amended EEP" or "proposed Amended Plan") to the Illinois Commerce Commission (ICC or Commission) in compliance with the requirements of Section 8-104(e-20) of the Public Utilities Act (the "Act"). On June 1, 2026, Public Act 104-0458, the Clean and Reliable Grid Affordability Act ("CRGA") became effective. CRGA includes several new and amendatory provisions to the Act, including substantial revisions to Section 8-104 governing the design, implementation, and cost recovery of natural gas energy efficiency programs in Illinois. Among these changes are a new subsection (e-20), which authorizes a single-fuel gas utility to propose, as part of its submission of a multi-year plan, to increase the amount of energy efficiency implemented in any multi-year planning period above the level that can be achieved under the spending cap set forth in subsection (d) of Section 8-104. 220 ILCS 5/8-104(e-20). Section 8-104(e-20) further provides that the first plan to increase energy efficiency may be submitted as an amendment to the utility's plan for calendar years 2027 through 2029, but any amended plan must be filed with the Commission by March 1, 2026, or the effective date of the amendatory Act of the 104th General Assembly, whichever is later.

This is an amendment to the Company's fifth EEP. Consistent with subsection (e-20), Nicor Gas increases annual budgets from levels set at 2% of projected revenue to levels approximately 3% of projected revenue. Annual budgets, reflecting this increase, as well as higher projected revenues overall, grow from \$57.8 million in 2026 to \$93.4 million in 2027 to 2029, an increase of over 60%.

Nicor Gas structured the proposed Amended EEP around an overall strategy targeting customers, communities, and climate.

- The primary goal is to partner with **customers** to save energy, reduce energy costs, and increase comfort. The Plan provides a comprehensive suite of programs for all customers, including homeowners and renters, households of all income levels, as well as small businesses, multi-family properties, large businesses, nonprofits, and public sector organizations.
- The portfolio also makes substantial investments to expand opportunity in underserved **communities**, including low-income communities, people of color, veterans, and other groups who have been underserved by past efforts. The proposed Amended EEP includes activities that increase energy efficiency program participation in these communities, expand the energy efficiency workforce in these communities, and expand opportunities for related businesses owned in these communities.
- The proposed Amended EEP also complements the companywide **climate** strategy of Nicor Gas' parent company, The Southern Company (Southern Company). Since 2018, Southern Company system management established GHG emissions reductions goals including an intermediate goal of 50% from 2007 levels by 2030 and a long-term goal of net zero by 2050. Nicor Gas is investing in programs and efforts to reduce GHG emissions associated with the delivery and use of natural gas, including the implementation of effective energy efficiency programs, continued research and development with a focus on technologies that lower GHG emissions, and constructively engaging with stakeholders to support outcomes leading to a net zero future.

These three pillars are all supported by a portfolio-wide emphasis on **innovation** that ensures that the portfolio continues to meet customer needs as energy efficiency markets evolve. Innovation initiatives include structured programs for emerging technologies and market transformation, as well as an overall culture of continuous improvement embedded in all portfolio programs and support functions. This emphasis complements Southern Company's industrywide leadership in developing, funding, and demonstrating new technologies for clean, safe, reliable, and affordable energy.

The Nicor Gas EEP builds on a successful portfolio that has matured over the last decade and makes key enhancements identified by working with important stakeholders. The portfolio maintains the core program structure from the current EEP, and leverages the infrastructure developed over years of working with customers, trade allies, implementation contractors, partner utilities, statewide weatherization programs, and the Illinois Energy Efficiency Stakeholder Advisory Group (SAG).

Key enhancements to the proposed Amended EEP include the following:

- **Increased portfolio budgets:** Average annual portfolio budgets increase from Nicor Gas's current approved filed plan for \$57.8 million in 2026 to \$93.4 million for 2027 to 2029. The new portfolio meets all the conditions that Section 8-104(e-20) requires for Nicor Gas to expand budgets beyond the 2% spending limit established in Section 8-104(c). The new budget reflects an increase in projected Nicor Gas revenue and represents approximately 3% of projected revenue from 2027 to 2029. Annual budgets described here and throughout the proposed Amended EEP are expressed as annual averages for the reporting period, consistent with Section 8-104(d) that sets budget levels across the "applicable multi-year reporting period".
- **Expanded income-eligible offerings:** Direct annual budgets for offerings serving income-eligible (IE) customers increase from \$17.25 million to \$28.02 million, and represent 30% of the total budget. Direct budgets of \$26.2 million annually (over 90%) include comprehensive weatherization offerings of (including health and safety funding up to \$4.2 million annually), public housing, affordable housing new construction, and comprehensive home energy assessment offerings. There is also an energy-saving kits offering of \$1.725 million annually. In total, the IE programs will annually spend almost \$11 million more annually than the current plan filing for the entire 2026 to 2029 period, and exceed the statutory requirement set in Section 8-104(e-8) that gas utilities spend at least 25% of total portfolio budgets on income-eligible programs.
- **Moderate Income Program:** Introduction of a new offering in 2027 to 2029 for customers earning between 80% and 100% of Area Median Income (AMI). With an average annual budget of \$2.2 million, the program will deliver free direct-install products and increased incentives for weatherization and HVAC replacement projects, requiring only a 10% customer contribution.
- **Expanded comprehensive residential offerings:** For customers who do not participate in the IE offerings, annual budgets for programs providing comprehensive weatherization and whole-building measures expand from \$5.4 million to \$9.0 million, which is an increase of 68%. Including both the residential and IE programs, 47% of the program budget supports these comprehensive weatherization and whole building offerings.
- **Inclusion of large industrial customers:** Consistent with Section 8-104(m-1), under this proposed Amended Plan, large industrial customers, who were previously exempt from inclusion in the portfolio, will now be eligible to be served by the portfolio unless they choose to opt out.
- **Market Development Initiative (MDI):** Nicor Gas will increase annual budgets from \$1.95 million to \$3.0 million to expand EEP participation by workers and businesses from underserved communities. This initiative will provide practical on-the-ground assistance, including workforce training, staffing grants, and business development assistance, and will also include funding for transportation, daycare, and other obstacles to success.
- **Evolving Market Transformation program:** The proposed Amended EEP continues the award-winning Market Transformation program, which produces long-term, structural changes in targeted markets. The program leverages strategic partnerships and collaborations with the Northwest Energy Efficiency Alliance ("NEEA") on high-performance windows and rooftop units, the North American Gas Heat Pump Collaborative, and the Partnership for Advanced Window Solutions ("PAWS"). **Advanced gas technologies:** The Plan continues to leverage the award-winning Emerging Technology program by including new gas technologies that will be critical to reducing GHG emissions from natural gas systems, including gas heat pumps, high performance windows, efficient rooftop units, and zero net energy homes. The Plan also supports other

emerging technologies that improve existing natural gas systems, including radiator systems, garage door hinges, and heat recovery systems.

- **Building code support:** The Plan extends the effectiveness of the Illinois statewide building code by partnering with local communities to improve code compliance and to implement stretch codes that allow communities to go beyond statewide requirements or to target existing buildings. This partnership with the other Illinois utilities will have a lasting impact throughout Illinois by increasing participation in existing codes and accelerating the adoption of more advanced codes.

1.2 Plan Investment and Results

Figure 1 shows the investments and benefits generated by the proposed Amended EEP. From 2026 through 2029, Nicor Gas will invest approximately \$338 million to help customers complete over 20,000 projects installing more than 200,000 energy efficiency measures in homes and businesses throughout northern Illinois. The plan is estimated to help customers save over 68 million annual net therms during the Plan cycle and over 836 million net therms over the lifetimes of the installed measures and projects. These savings are estimated to reduce greenhouse gas emissions by over 4.4 million metric tons and water use by over 699 million gallons over the life of installed measures. These projects are also cost-effective investments for Nicor Gas customers: the portfolio's benefit-cost ratio from the Illinois Total Resource Cost (TRC) perspective is 4.17, producing net lifetime benefits of over \$1.2 billion to the Nicor Gas service territory.

Taken together with efforts in previous years, by the end of this next Plan cycle, Nicor Gas will have invested over \$961 million since 2010 to help customers save over 290 million net first-year therms through 2029. Counting from portfolio inception in 2010 through the end of the useful lives of equipment installed in 2029, the portfolio will save more than 3.75 billion net lifecycle therms, more than 19.8 million lifecycle tons of greenhouse gases, and almost 9.6 billion lifecycle gallons of water. These lifecycle savings are enough to offset the annual emissions from 4.6 million automobiles or the annual emissions associated with heating 2.6 million Illinois households.

The portfolio also contributes significantly to the northern Illinois economy. The 2026-2029 portfolio will support an estimated \$615 million of economic impact, over \$379 million in wages, and over 2,770 jobs. From the beginning of the portfolio in 2010 through 2029, the portfolio supports over \$2.6 billion in economic impact, almost \$1.2 billion in wages, and over 14,190 jobs.

Figure 1 Portfolio Outcomes

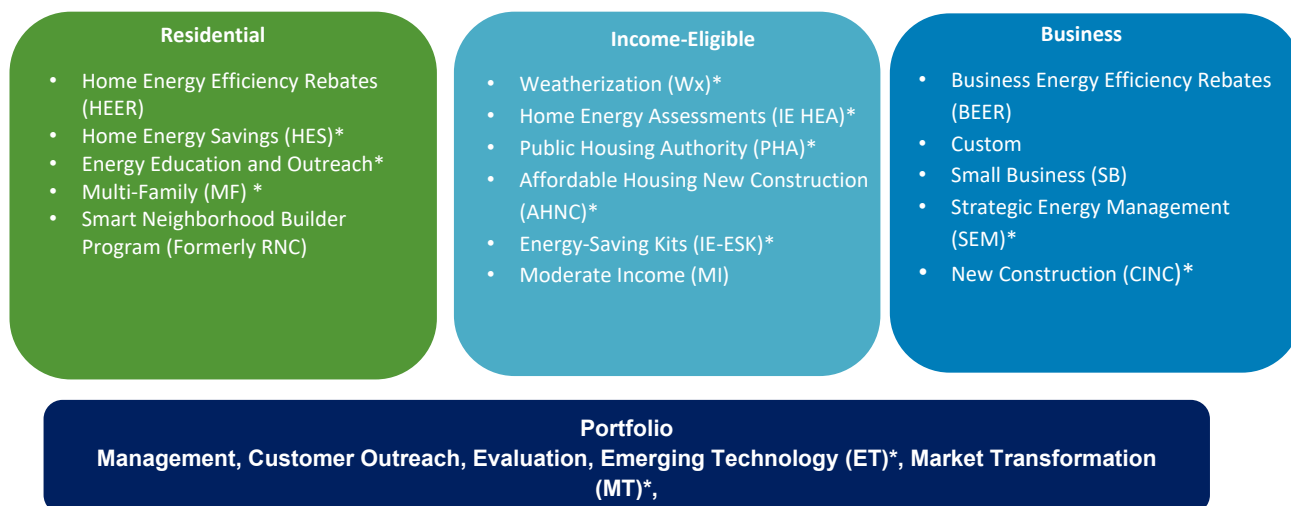
Proposed Amended 2026-2029 EEP (Estimated)	Entire Portfolio, Since 2010
\$338M Investment >68.4M Annual Net Therms >836M Net Lifecycle Therms >4.4M Metric Tons GHG Reduced >699M Gallons Water Conserved >\$615M Economic Impact >\$379M Wages >2,770 Jobs	>\$961M Investment >290M Net Therms in 2029 >3.75B Net Lifecycle Therms >19.8M Metric Tons GHG Reduced >9.6B Gallons Water Conserved >\$2.6B Economic Impact >\$1.2B Wages >14,190 Jobs

1.3 Portfolio Features

Figure 2 outlines the portfolio program structure. The EEP portfolio offers programs are organized around offerings for residential, IE, and business customers, with each program including multiple offerings that provide a more comprehensive portfolio within an efficient management structure. The portfolio also funds

two innovation programs (Emerging Technology and Market Transformation), the MDI Initiative and a number of essential portfolio support functions.

Figure 2 Portfolio Structure



*Joint or coordinated programs with ComEd and/or Ameren and/or Peoples/North Shore Gas

The programs employ a wide range of delivery strategies to provide all customers with meaningful opportunities to participate. The strategies target:

- Residential single-family and multi-family homes
- Households of all income levels
- Large and small businesses, public sector entities, community-based and nonprofit organizations
- Customers in existing buildings as well as builders constructing new homes and facilities
- Home owners, commercial building owners, renters and landlords
- Opportunities when customers buy new or replacement equipment, as well as opportunities for customers to retrofit or improve operations for existing equipment
- Opportunities for customers to develop comprehensive solutions across multiple systems and buildings, as well as simpler opportunities for customers to implement individual measures
- New advanced technologies like gas heat pumps and Venturi steam traps, as well as time-honored measures such as building insulation and low-flow showerheads.
- Programs providing free products and services—including some offerings where contractors install equipment directly in customer facilities—as well as programs that require some customer investment
- Programs specifically reaching income-eligible customers with additional free services and measures
- A wide range of strategies for overcoming market barriers to energy efficiency and improving Nicor Gas communities through financial incentives, education, training, energy assessments, design assistance, project management assistance, trade ally network development, quality assurance, and additional strategies

Nicor Gas coordinates many of the offerings with other Illinois utilities, including ComEd, Peoples Gas, and North Shore Gas in northern Illinois and Ameren Illinois in communities near Bloomington-Normal.

Nicor Gas may also leverage investments by coordinating with other national, regional, state, and local organizations including ENERGY STAR®, Weatherization Assistance Program, Low Income Heating Energy Assistance Program, Gas Technology Institute, North American Gas Heat Pump Collaborative, Emerging Technologies Coordinating Council, Midwest Energy Efficiency Alliance, Midwest Market Transformation Collaborative, Illinois Home Performance, federal Inflation Reduction Act incentives, Illinois Home Weatherization Assistance Program (IHWAP), Illinois Municipal Electric Authority, Illinois Utilities Business Diversity Council, Salvation Army and a wide range of community-based organizations and Community Action Agencies.

1.3.1 Residential Programs

The residential programs provide opportunities for customers to progress on a journey from initial education, outreach and engagement to investing in household energy efficiency projects. The offerings serve a wide cross section of customer housing types, equipment types, income levels, and other customer needs. The five residential programs are described in further detail in Chapter 2.

- **Energy Education and Outreach** includes three offerings that provide free measures for residential customers to install or address on their own. *Home Energy Reports (HER)* provides customers with periodic reports comparing their energy use to that of similar, anonymized households in their neighborhoods, along with suggestions for saving energy. *Energy-Saving Kits (ESK)* provide free water-saving and weatherization measures for customers to install. *Elementary Energy Education (EEE)* provides an energy efficiency curriculum delivered by teachers in local schools, along with water-saving kits that students install at home.
- **Home Energy Savings (HES)** includes two offerings that help customers retrofit single-family and other small residential buildings. *Home Energy Assessments* provide energy assessments that identify energy efficiency upgrades and include free measures to help customers start saving energy. *Air Sealing and Insulation* provides rebates to customers working with local insulation contractors to weatherize their homes.
- **Home Energy Efficiency Rebates (HEER)** provides rebates to customers working with local mechanical contractors and retailers to install efficient furnaces, boilers, water heaters, pool covers and thermostats.
- **Multi-family (MF)** provides a range of offerings that help customers retrofit multi-family buildings. The program provides free comprehensive assessments, direct installation of free measures, free central heating plant optimization, and rebates for equipment upgrades and building weatherization.
- **Smart Neighborhood Builder (SNB)** provides prescriptive rebates to home builders that install enhanced weatherization, advanced thermostats, and efficient space heating and water heating equipment.

1.3.2 Income-Eligible Programs

The income-eligible programs provide a range of free services to vulnerable households in northern Illinois. Consistent with Sections 8-104(e-7), (e-8), and (e-20), the programs serve low-income households with incomes below 80% of Area Median Income (AMI) and Nicor Gas moderate-income households with incomes between 80% of AMI and 100% AMI. The programs are coordinated with and leverage funding from other Illinois utilities, IHWAP, community action agencies, and community-based organizations. The six income-eligible programs are described in Chapter 3.

- **IE Weatherization** provides free weatherization and other comprehensive upgrades to income-eligible households in both single-family and multi-family buildings. This program leverages the IHWAP program, where possible, and also provides opportunities through other contractors when IHWAP cannot fully meet customer needs.

Moderate Income Program: offering for customers earning between 80% and 100% of Area Median Income (AMI). With an annual average budget of \$2.2 million, the program will deliver free direct-install products and increased incentives for weatherization and HVAC replacement projects, requiring only a 10% customer contribution.

- **Healthy Homes** sets aside a portion of the IE Weatherization program to fund housing-related health and safety assessments and targeted measures—such as ventilation improvements, moisture and mold mitigation, and minor repairs—necessary to enable or complement energy efficiency upgrades, delivered in coordination with community-based partners
- **IE Home Assessments (IE HA)** provide free energy assessments that act as intake for the comprehensive IE Weatherization program while also directly installing free measures like thermostats and showerheads. This also includes a self-assessment portal similar to the market-rate offering.
- **IE Energy-Saving Kits (IE ESK)** provides free kits containing water savings and weatherization measures for income-eligible households to install.
- **Public Housing Authority (PHA)** provides weatherization and other comprehensive upgrades to Public Housing Authorities, including energy assessments, direct installation measures, building weatherization, and heating and water heating equipment.
- **Affordable Housing New Construction (AHNC)** provides comprehensive design services and financial incentives to improve energy efficiency in new construction built for income-eligible households.

1.3.3 Business Programs

The business programs provide a range of offerings tailored to non-residential customers, which also include public sector, and nonprofit organizations. Consistent with Section 8-104(e-5), Nicor Gas funds public customer offerings at 30% of the total non-residential budget. The business programs are described in further detail in Chapter 4.

- **Business Energy Efficiency Rebates (BEER)** provides prescriptive rebates to business customers that work with local trade allies to install efficient heating, water heating, food service, controls, and other equipment. This program also funds the business optimization offering and energy assessments that help customers understand the opportunities in their facilities and includes free, directly installed measures.
- **Custom Incentives (Custom)** provides financial incentives and project management support to customers installing measures not covered by the prescriptive BEER program, including a retro-commissioning offering that helps customers optimize existing controls and energy systems. Custom projects tend to focus on large, complex systems utilized by large, energy intensive customers.
- **Small Business (SB)** provides targeted support to small business customers, including energy assessments to identify efficiency opportunities, direct installation of free measures, and prescriptive and custom rebates for other upgrades.
- **Strategic Energy Management (SEM)** provides strategic consulting assistance to help customers identify and implement projects and management systems throughout their facilities. Nicor Gas delivers SEM in cohort groups that allow customers to learn and share best practices with peer businesses. Capital projects identified through the programs are delivered through other offerings (e.g., the BEER and Custom programs), while savings from other operational changes are tracked directly within the SEM program.
- **Commercial and Industrial New Construction (CINC)** provides comprehensive design services and financial incentives to improve the energy performance of new buildings used by business customers.

1.3.4 Innovation Programs

Innovation programs help the portfolio continue to meet customer needs as energy efficiency markets evolve. Innovation programs are described in further detail in Chapter 5.

- **Emerging Technology** identifies promising new technologies and delivery approaches that can expand savings opportunities for Nicor Gas customers. The program tests new technologies in real world conditions, helps manufacturers verify and document equipment performance, and transitions new technologies into the broader portfolio. The program also tests new program approaches that can more effectively deliver new and existing energy efficiency measures to customers.
- **Market Transformation** uses targeted strategies to overcome market barriers to new technology adoption and leverages funding from additional partners to produce long-term, structural changes in targeted markets. The program also works with local government agencies to improve building code compliance and to offer stretch codes that go beyond statewide requirements or target existing buildings.

1.3.5 Portfolio Functions

Successful portfolio implementation depends on essential support functions that provide strategic oversight, and the infrastructure for planning, marketing, managing, tracking, evaluating, and reporting on the individual programs. Portfolio functions are described in further detail in Chapter 6.

- **Education and Outreach** increases awareness and helps to drive participation in program offerings. The internal team executes portfolio communication strategies, coordinates program strategies among implementation contractors, trade allies, and other partners, and leads creative development for communications, websites, and collateral. There is also a Marketing and Outreach (MOC) team that serves both as a specialized call center for program inquiries and outreach/education resource for community events.
- **Information Technology (IT)** develops and manages a service management ecosystem that supports software, cloud infrastructure, data warehouse, analytics, and security. The data warehouse system (energyENGINE) houses the customer participation data that must be collected, stored, analyzed and reported on to both internal and external parties. The broader IT systems provide the technology backbone for all elements of the portfolio operations, from marketing to delivery, to evaluation and data analytics.
- **Planning** develops and optimizes long-term energy efficiency plans that cover the four-year periods approved by the ICC, as well as annual and other short-term plans that adjust for ongoing changes in program costs, performance, and external factors.
- **Portfolio Administration** provides the other functions necessary to manage the portfolio, including accounting, regulatory and stakeholder support, reporting, procurement, internal EM&V activities, and coordination with other Southern Company management systems.
- **EM&V** includes the external costs associated with the firms Nicor Gas retains to provide a full independent evaluation of the performance and cost-effectiveness of the portfolio, consistent with the provisions of Section 8-104(f)(8), or as otherwise directed through the Illinois Energy Efficiency Policy Manual ("Policy Manual") or the Commission.

1.4 Building from Past Efforts

The Plan builds on the firm foundation and strategy that the Nicor Gas Energy Efficiency Program has developed since its inception. In May 2010, Nicor Gas launched a pilot energy efficiency portfolio funded through the Company's Rider 29. The Rider 29 portfolio included six programs: Residential Prescriptive

Rebates, Home Weatherization, Multi-family Buildings, Elementary Education, Business Prescriptive Rebates, and Large Business Custom. This initial portfolio helped Nicor Gas build relationships with customers and trade allies and build infrastructure in areas of rebate processing, trade ally management, customer engagement, contractor procurement, and information systems. The pilot portfolio was implemented primarily through outsource contractors, including contractors responsible for turnkey program implementation as well as program evaluation.

The first EEP authorized by Section 8-104 launched in June 2011 and added seven new programs to the Rider 29 portfolio. New offerings included a small business program, two new construction programs, a behavior change offering, and three programs providing targeted services to business customers. In developing this portfolio, Nicor Gas created a long-term strategy with planned evolution over time. It was clear that energy efficiency was a lasting commitment by the Company and for Illinois, and so Nicor Gas evaluated EEP management options ranging from turnkey outsourcing, at one extreme, to full internal delivery at the other. Nicor Gas executed a hybrid strategy that began with the full outsource model, built internal core competencies over time, and correspondingly lessened reliance on external contractors.

Critical competencies Nicor Gas targeted for eventual insourcing involved managing the strategic planning and execution of the portfolio; managing interactions with customers, stakeholders, and regulators; managing data and process flows; and providing financial controls. While Nicor Gas initially relied fully on outsource contractors for these functions, the Company has since built substantial internal functions for Planning, Program Operations, Innovation, Customer Outreach, Trade Ally Outreach, Communications, Call Center, Regulatory and Stakeholder Support, Evaluation, Information Systems, Analytics, Accounting, and Procurement. While Nicor Gas still relies on some outsource contractors to support these functions, retaining these core proficiencies in-house ensures that Nicor Gas maintains strategic direction and control, and also makes the portfolio more nimble and responsive to customer needs. The strategy also allows Nicor Gas to replace external contractors as business needs evolve without significant risks or impacts to customers. By maintaining strategic control, the Nicor Gas Energy Efficiency Program remains the hub for data, expertise, and institutional knowledge, allowing contractors to be added or removed for specialty expertise.

This strategy has generated efficiencies that lower costs and improve service to customers. By building internal expertise, Nicor Gas reduced the number of implementation contractors and their scopes responsibilities, and consolidated six different call centers into one fully integrated operation. Nicor Gas also improved communication with customers and trade allies, better targeting offerings, troubleshooting issues, and increasing engagement with underserved communities. The energyENGINE data warehouse consolidated data across all program and outreach activities, and integrated data from the Nicor Gas billing system, purchased demographics and market intelligence. The platform allows internal staff and to manage all portfolio activities, including dynamic portfolio design, real time EM&V, data mining, analytics, market research, target marketing, market potential studies, and other activities.

Nicor Gas has also invested in innovation to ensure that the portfolio continues to serve customers as energy efficiency markets evolve. Consistent with Sections 8-104(g) and 8-104(e-5) of the Act, Nicor Gas manages an Emerging Technology program that identifies promising new technologies and delivery models, and a Market Transformation program that produces long-term, structural changes in targeted markets. The programs have successfully spurred innovation by local and national manufacturers and have resulted in more than 25 workpapers to date for new technologies in the Illinois TRM, as well as the Market Transformation Policy Resolution adopted by the SAG. The programs have been featured at conferences run by the American Council for an Energy Efficient Economy, the Emerging Technologies Coordinating Council, the Midwest Energy Efficiency Alliance, and E-Source and have won multiple awards. Nicor Gas innovation investments are also significantly leveraged through complementary investments from other utility partners. Nicor Gas spearheaded creation of the Midwest Market Transformation Collaborative and the North American Gas Heat Pump Market Transformation Collaborative, and Nicor Gas is also active in the Emerging Technologies Coordinating Council, the

Partnership for Advanced Window Solutions, and the Gas Technology Institute's Emerging Technology and Utilization Technology Development programs.

Nicor Gas has also developed an extensive network of local businesses delivering energy efficiency products and services to Nicor Gas customers. These trade allies provide equipment for space heating, water heating, and cooking; weatherization and air sealing services; retail products such as showerheads and thermostats; and engineering and architectural services. The network covers product value chains from manufacturers down to distributors and local installers. The network also includes key market enablers such as realtors, real estate developers, local municipalities, and environmental organizations. In all, Nicor Gas' trade ally database lists over 10,000 organizations located throughout Northern Illinois.

1.5 Awards and Recognitions

The Nicor Gas Energy Efficiency Program has received 19 national and regional awards and has been highlighted across numerous industry conferences and reports. Awards received during the last two plan cycles (since 2015) are listed below:

- 2025 AESP Energy Award – Leadership in Diversity, Equity and Inclusion – Organization
Awarded for Nicor Gas Energy Efficiency Program's Market Development Initiative
- 2025 Inspiring Efficiency Education Award
Awarded for Nicor Gas Energy Efficiency Program's Market Development Initiative
- 2024 ACEEE Leaders of the Pack – Low-income Households
Awarded for Illinois Home Energy Savings Solutions
- 2019 Association of Energy Services Professionals Energy Award for Outstanding Achievement in Market Research and Evaluation
Awarded for Nicor Gas' Market Research and Evaluation Initiatives through the Market Transformation program.
- 2018 Illinois Sustainable Technology Center Sustainability Award
Awarded to the Emerging Technology Program for its efforts to reduce environmental impact and contribute to the growth of a more sustainable economy.

Marketing awards

- 2024 ESource Achievements in Customer and Employee Experience – Silver Prize
Awarded for the Community Connection Center
- 2020 Gold Stevie Award
Awarded for the Unexpected Love Story campaign from the American Business Awards
- 2020 Inspiring Efficiency Marketing Award
Awarded for the Unexpected Love Story campaign
- 2019 Gold Stevie Award for Women in Business
Awarded for the Unexpected Love Story campaign in its marketing for women, created by a woman-led team.
- 2017 Inspiring Efficiency Marketing Award for Multicultural Marketing Strategy
Awarded for multicultural marketing strategy including demographic research, event outreach, hyper-local print publication placements and digital ads.

- 2015 Inspiring Efficiency Marketing Award for Customer Journey Strategy
Awarded for marketing & communications strategy including customer journey-mapping, overhauling communications with energySMART rebranding, and Customer Stories campaign
- 2015 Inspiring Efficiency Education Award
Awarded for "What's in the Box" campaign focused on understanding how a furnace works.

Nicor Gas will continue to share learnings gained from our local experience. We will continue to present at peer conferences and collaborate with other utilities and organizations to help lead our industry, benchmark our activity, and advance the overall goals of energy efficiency.

1.6 Economic Impacts

The Nicor Gas Energy Efficiency Program generates significant economic activity in northern Illinois. The portfolio generates direct impacts by funding rebates and by paying staff and contractors, and also generates additional indirect and induced impacts, including changes to net incomes for the business and households participating in the programs, paying for the programs through rates, and distributing their bill savings through increased spending at other businesses in the community.

As shown in Figure 3 and Figure 4, the proposed Amended EEP is expected to generate \$381 million in wages, spur \$615 million in total economic activity, and support over 2,770 jobs. Taken together with earlier investments dating back to 2010, by 2029, the Energy Efficiency Program is expected to generate over \$1.2 billion in wages, over \$2.6 billion in total economic activity, and support over 14,200 jobs.

Figure 3 Economic Impacts of 2026-2029 Portfolio

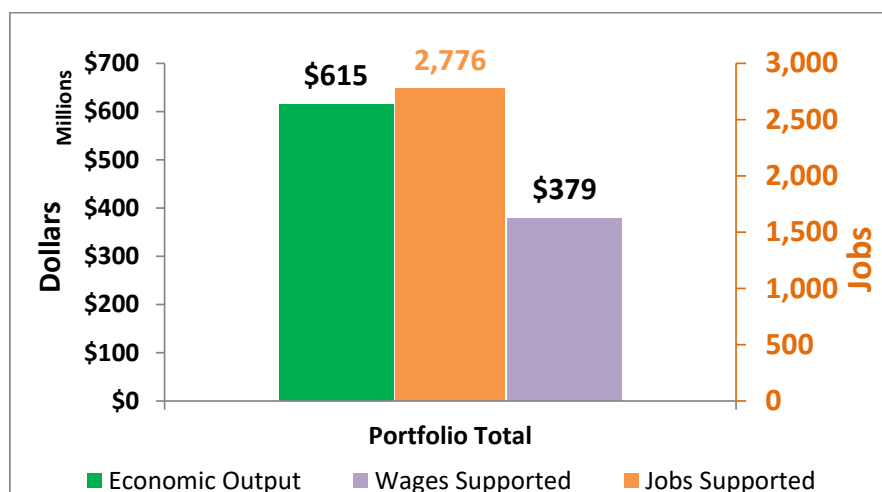
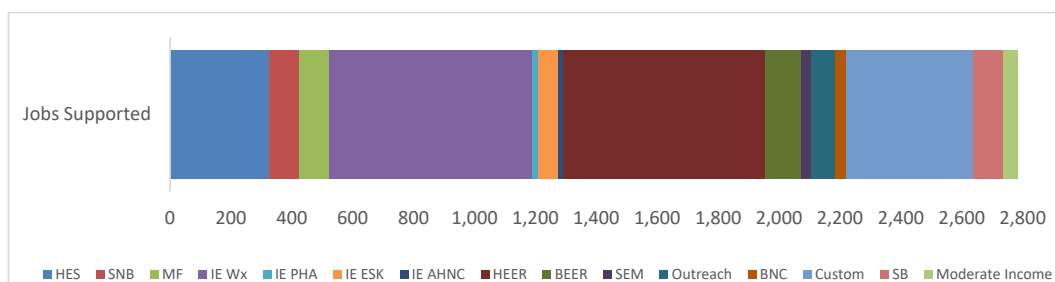


Figure 4 Jobs Supported by 2026-2029 Portfolio, by Program



1.7 Diversity and Inclusion

At Nicor Gas, we believe diverse businesses bring innovation, quality and overall competitive value to our organization. We recognize that our business diversity efforts have positive and lasting impacts on our communities, and we remain committed to doing business the right way – embracing and promoting diversity and inclusion as a part of our corporate values.

As discussed earlier, the Nicor Gas Energy Efficiency Program's MDI Initiative will continue to invest in workforce and business development for underrepresented populations and economically disadvantaged communities. This exciting standalone initiative combines research, development of a market development action plan, and contractor and workforce support to increase the energy efficiency funds delivered directly to these groups.

As the portfolio continues to mature, the Nicor Gas Energy Efficiency Program will continue to explore and increase opportunities for direct and indirect spending with minority-, women-, and veteran-owned businesses. Supporting and enabling diversity and inclusion is a business priority. Diversity describes the many similarities and differences between people, from life and work experiences, perspectives, and cultures, to race, gender, sexual orientation, socio-economic status, national origin and age. It is commonly known that companies value what they are willing to pay for, and Nicor Gas is truly committed to valuing diversity. As evidenced through this MDI initiative, Nicor Gas has committed to investigate ways to integrate workforce development initiatives, in coordination with other utilities, workforce development entities, and local community-based organizations.

Nicor Gas will engage in discussions within low-income energy efficiency advisory committees and other stakeholders that aim to increase the diversity and number of locally-based trainees, vendors, and employees of the energy efficiency workforce within the Nicor Gas territory and integrating workforce development initiatives.

Our results reflect our intentional efforts to advocate, develop and create opportunities for diverse businesses. We understand that this commitment has a reach far beyond the diverse vendors we directly contract with. We also affect the communities where these businesses operate and where their employees live. Since 2015, the Nicor Gas energy efficiency team has increased supplier diversity by including diversity in all sourcing decisions, and by collaborating closely with our implementation contractors to expand opportunities for additional diverse spending. This has resulted in additional mentoring, consultation, business education and training that helps diverse businesses expand their service offerings and broaden their presence into our business.

At Nicor Gas, we believe organizational diversity in our workplace is closely tied to our success, and we are committed to providing a workplace where all employees thrive and feel valued and respected. Not only is the Nicor Gas energy efficiency team diverse demographically and in experience, but our team participates significantly in Employee Resource Groups that celebrate organizational diversity and provide personal and professional development. Our team is also active in statewide efforts such as the Illinois Utilities Business Diversity Council.

1.8 Statutory Spending and Savings Goals

Section 8-104 of the Act outlines requirements for spending and statutory saving targets. Table 2 shows the calculation of these requirements for the proposed Amended EEP.

Table 2 Statutory Spending and Savings Targets

	Percentage Target	Targets				
		2026	2027	2028	2029	4-Year Total
Spending Requirements of Section 8-104						
Revenue Basis*		\$3,090,827,876	\$3,114,555,936	\$3,113,547,369	\$3,112,538,801	\$12,431,469,982
Annual Spending Limit	2%	\$61,816,558	\$62,291,119	\$62,270,947	\$62,250,776	\$248,629,400
EEP Budget - Amended		\$57,800,000	\$93,400,000	\$93,400,000	\$93,400,000	\$338,000,000
Income Qualified (% of Revenues)	12.4%	\$7,145,321				\$7,145,321
Income Qualified (25% Minimum)	25%		\$23,350,000	\$23,350,000	\$23,350,000	\$70,050,000
Public Sector (10% Minimum of Portfolio Budget)	10%	\$5,780,000				\$5,780,000
Public Sector (30% Minimum of Business Program Budget)	30%		\$6,646,706	\$6,646,706	\$6,646,706	\$19,940,119
Emerging Technology (Maximum)	3%	\$1,734,000	\$2,802,000	\$2,802,000	\$2,802,000	\$10,140,000
Market Transformation (Maximum)	5%	\$2,890,000	\$4,670,000	\$4,670,000	\$4,670,000	\$16,900,000
Savings Targets of Section 8-104						
2009 Sales Basis		4,696,987,103	4,696,987,103	4,696,987,103	4,696,987,103	18,787,948,412
Less Exempt Customer Sales		808,331,774	808,331,774	808,331,774	808,331,774	3,233,327,097
Sales Basis for Savings Targets		3,888,655,329	3,888,655,329	3,888,655,329	3,888,655,329	15,554,621,315
Savings Target	1.5%	58,329,830	58,329,830	58,329,830	58,329,830	233,319,320
* Revenue Basis was updated for this amended plan based on an approved rate case in 2025 and after the ICC approved the original 2026-2029 EE filed plan.						

Section 8-104(d) limits portfolio spending so that it does not increase retail natural gas service costs by more than 2%. However, Section 8-104(e-20) allows single-fuel natural gas utilities filing Amended Plans to exceed this spending limit.

In Docket No. 10-0562 approving the first Nicor Gas plan, the Commission clarified that the 2% spending limit applies to revenues from whole requirements customers and transportation customers as well as implied gas cost revenue for those residential and small commercial customers purchasing natural gas from third parties. The Commission also clarified that the spending limit excludes spending by large transportation customers on alternative gas suppliers, as well as revenue from large customers exempt from the Energy Efficiency Program as specified in Section 8-104(n) of the Act.

The Act also specifies spending for several activities covered by the plan, including:

- **Income-Eligible Spending:** Section 8-104(e-8) requires that the portion of the entire budget for efficiency programs spent on low-income households shall be no less than the greater of 25% or five percentage points more than the proportion of total annual gas sales to non-opt-out retail customers consumed by low-income households. For Nicor Gas, the proportion of total annual gas sales to non-opt-out retail customers consumed by low-income households was determined to be 18.2%, which is not greater than 25% with five more percentage points. Based on this it requires annual IE spending to exceed 25% of the entire portfolio budget, or \$23.35 million annually for 2027 to 2029.
- **Public Sector Spending:** Section 8-104(e-20), requires the spend for measures from public sector customers to exceed 30% of non-residential spending, which, for this proposed Amended Plan, represents approximately \$6.64 million per year for 2027 to 2029.

- **Emerging Technology Spending:** Section 8-104(g) allows spending on research and development for emerging technologies to be no more than 3% of the total portfolio budget, which, for this proposed Amended Plan, for 2027 to 2029 represents just over \$2.1 million per year which is less than the 3% maximum.
- **Market Transformation Spending:** Section 8-104(e-5) states that Nicor Gas may spend 5% of the entire portfolio budget on grants to public sector customers for market transformation activities, which, for this proposed Amended Plan, for 2027 to 2029 represents \$3.87 million per year and under the 5% maximum. Under the Act, Nicor Gas can also spend additional funds for initiatives targeting customers outside of the public sector.
- **Evaluation, Monitoring, and Verification (EM&V) Spending:** Section 8-104(f)(8) allows spending on EM&V to be no more than 3% of the total portfolio budget, which, for this proposed Amended Plan, for 2027 to 2029 represents just over \$2.3 million per year and less than the 3% maximum.

Table 2 also outlines statutory savings targets. Section 8-104(c) defines targets of 1.5% of Nicor Gas sales for each year of the EEP, with percentage savings measured relative to Nicor Gas sales during 2009, adjusted for sales to exempt customers in 2009. Section 8-104(c) also allows the Commission to reduce savings targets if the utility demonstrates that it is highly unlikely that the 8-104(d) requirements could be achieved without exceeding the 2% spending limit.

Finally, the Act, as well as additional Commission policies defined in the Policy Manual, provide natural gas utilities with substantial flexibility in managing spending and savings. Rather than meet annual spending and savings targets, the Act allows Nicor Gas to meet cumulative targets across the three years covered by the plan. In Docket No. 13-0498 and Docket No. 15-0297, the Commission determined that cumulative savings targets are calculated as the sum of annual savings targets. In addition, the Policy Manual allows Nicor Gas the flexibility to shift funding among individual programs as long as large shifts occur in consultation with the SAG, are reported to the Commission, and are consistent with any other requirements of the EEP approved by the Commission.

1.9 EEP Spending and Savings Targets

Tables 3 and 4 outline the spending, savings, and cost-effectiveness targets for the proposed Amended EEP, with detail by program and portfolio function. Table 3 provides targets for the average year of the proposed Amended EEP; Table 4 shows targets as 4-year totals.

As described in Section 1.8, Section 8-104(e-5) requires minimum spending for income-eligible offerings that is proportionate to total utility revenues contributed by households earning less than 150% of the poverty level in 2026. For Nicor Gas this represents 12.4% of the portfolio budget, or \$7.17 million in 2026. For 2027 to 2029 Section 8-104(e-8) requires that the portion of the entire budget for efficiency programs spent on low-income households shall be no less than the greater of 25%. In consultation with the SAG members and additional community agencies, Nicor has instead budgeted \$17.25 million for these offerings in 2026 and \$28.02M in 2027 to 2029, which represents approximately 30% of the portfolio budget, or approximately 1.4 times the minimum requirements outlined in the Act. These budgets over the 4 years include \$94.4 million in programs providing comprehensive, whole building solutions and including Public Housing retrofits, income-eligible home assessments, direct installs, and affordable housing new construction projects, as well as another \$6.9 million for IE Energy-Saving Kits, which provide more limited savings to customers who cannot be served within the capacity constraints of the comprehensive IE programs. These budgets include only direct spending on the IE programs. In 2027 to 2029 there is a new offering for Moderate Income providing comprehensive whole building solutions for \$6.6M over the 3 years. When proportionate allocations of portfolio function costs are included, total spending on IE programs increases to \$129 million over the 4 years.

As described in Section 1.8, Section 8-104(e-20) of the Act requires that, because Nicor Gas files a proposed Amended Plan under the provisions of Section 8-104(e-20), the minimum spend from measures from public sector customers shall be equal to at least 30% of the Business Program budget, non-residential spending, which, for Nicor Gas, represents approximately \$3.89 million per year. Nicor Gas has budgeted over 35% of the business programs budget, or \$4.58 million for these offerings, which are spread across the five business programs. To better serve both public sector and other business customers, Nicor Gas integrates the public sector offerings within the broader business portfolio.

As described in Section 1.8, Section 8-104 limits maximum spending for innovation initiatives to 3% of portfolio budgets for Emerging Technology and allows at least 5% of portfolio budgets for Market Transformation. Nicor Gas has budgeted \$4.7 million annually for these offerings, or 8% of the total portfolio budget.

As outlined in Section 1.8, Section 8-104(c) allows the Commission to reduce savings targets if it is highly unlikely that statutory targets could be achieved without exceeding the 2% spending limit. In the third year of the Nicor Gas Energy Efficiency Program, covering portions of the years 2013 and 2014, Nicor Gas and the Illinois Department of Commerce and Economic Opportunity (which, at the time, was responsible for delivering income-eligible, public sector, and market transformation programs) spent \$79 million delivering the combined portfolio. The combined portfolio generated savings of 33 million net annual therms, which, at the time, was the highest annual savings ever achieved by any North American natural gas energy efficiency portfolio. However, even at this spending level, which was more than 1.7 times the budget available to Nicor Gas in the upcoming plan cycle, these savings only represented 0.8% of 2009 sales. Also Nicor Gas participated in the 2023-2024 Illinois Baseline & Potential Study prepared for the Joint Utilities (Commonwealth Edison, Ameren Illinois, and Nicor Gas) dated December 13, 2024, and feedback from SAG members. Based on these experiences and the results of the Potential Study, it is clear that Nicor Gas cannot achieve the statutory spending targets without exceeding the 2% spending target, and that the savings targets outlined in Tables 3 and 4 are appropriate. These savings represent approximately 0.44% of the annual sales subject to the Plan.

The Illinois Energy Efficiency Policy Manual outlines procedures for these goals to adjust in future years if key inputs used to calculate the proposed Amended EEP goals change after plan approval due to annual updates in the Illinois TRM or due to annual updates in net-to-gross ("NTG") ratios. In the Settlement Stipulation, Nicor Gas also agreed with Stipulating Parties to further adjust savings goals if contributions from ComEd towards joint program costs differ from assumptions Nicor Gas used to develop the proposed Amended Plan budgets and savings targets. In Appendix B, Nicor Gas will provide the template spreadsheet that will be used to calculate adjusted savings goals. This includes the independent Evaluators verifying that the adjustments to the energy savings goals have been performed accurately in 2026 and are performed accurately with the annual Illinois TRM version updates effective in 2027 to 2029.

Table 3.1 2026 EEP Annual Spending and Savings Targets (Budgets and Savings in Thousands)

Thousands (000)	Annual Budget	Annual Savings (Therms)	Lifecycle Savings (Therms)	Lifecycle GHG Savings (Tons)	TRC Benefit/Cost Ratio
Residential Programs					
HEER	\$4,150	2,721	47,687	252	7.30
HES	\$5,462	721	14,316	76	4.45
Multi-Family	\$2,369	372	5,401	29	3.72
Outreach	\$2,584	1,374	10,678	56	7.52

Smart Neighborhood Builder	\$1,064	261	4,585	24	4.73
Income Eligible Programs					
IE Weatherization	\$13,079	748	11,568	61	1.41
IE HEA	\$899	98	1,081	6	2.21
IE PHA*	\$805	27	397	2	0.84
IE AHNC	\$742	46	952	5	2.10
IE ESK	\$1,725	715	10,191	54	13.03
Moderate Income	\$0	0	0	0	
Business Programs*					
BEER	\$4,098	3,416	24,520	130	11.12
C&I New Construction	\$515	52	1,080	6	2.38
Business Custom	\$4,981	1,560	25,027	132	5.27
SB	\$2,146	1,509	11,011	58	8.27
Strategic Energy Management	\$1,212	1,025	7,178	38	10.85
Portfolio Functions					
Emerging Technology**	\$1,734				
Market Transformation**	\$2,890				
Market Development Initiative	\$1,950				
Program Evaluation	\$1,734				
Portfolio Management	\$2,620				
Portfolio Education and Outreach	\$1,040				
Subtotals					
Residential	\$15,629	5,450	82,668	437	5.91
Income Eligible	\$17,250	1,634	24,189	128	2.41
Business*	\$12,953	7,564	68,816	364	7.42
Portfolio	\$11,968	0	0	0	0.00
Totals	\$57,800	14,648	175,672	929	5.30
Subtotals, Including Allocated Portfolio Function Costs					
Residential	\$19,710	5,450	82,668	437	5.20
Income Eligible	\$21,755	1,634	24,189	128	1.98
Business*	\$16,335	7,564	68,816	364	6.31
Total	\$57,800	14,648	175,672	929	5.30
* For 2026 Business Programs and IE PHA include annual funding of \$5.78M for Public Sector offerings, including allocated portfolio function costs.					
** Emerging Technology is not projecting any savings and Market Transformation includes all program costs and the projected savings are included in the Residential Program savings.					

Table 3.2 2027-2029 EEP Average Annual Spending and Savings Targets (Budgets and Savings in Thousands)

Thousands (000)	Annual Budget	Annual Savings (Therms)	Lifecycle Savings (Therms)	Lifecycle GHG Savings (Tons)	TRC Benefit/ Cost Ratio
Residential Programs					
HEER	\$7,468	3,051	53,824	285	6.28
HES	\$9,578	1,075	19,776	105	3.83
Multi-Family	\$3,551	490	7,058	37	3.70
Outreach	\$3,521	1,572	13,302	70	6.93
Smart Neighborhood Builder	\$1,871	411	7,221	38	5.21
Income Eligible Programs					
IE Weatherization	\$22,895	849	16,152	85.5	1.36
IE HEA	\$1,562	137	1,513	8.0	1.94
IE PHA	\$874	28	410	2.2	0.86
IE AHNC	\$964	48	990	5.2	1.79
IE ESK	\$1,725	715	10,191	53.9	14.04
Moderate Income	\$2,200	60	1,174	6.2	1.18
Business Programs*					
BEER	\$6,345	4,194	30,559	162	10.43
C&I New Construction	\$847	71	1,460	8	2.40
Business Custom	\$9,684	2,359	35,682	189	5.45
SB	\$3,692	1,688	12,754	67	6.47
Strategic Energy Management	\$1,588	1,177	8,238	44	11.38
Portfolio Functions					
Emerging Technology**	\$2,102				
Market Transformation**	\$3,870				
Market Development Initiative	\$3,000				
Program Evaluation	\$2,302				
Portfolio Management	\$2,621				
Portfolio Education and Outreach	\$1,140				
Subtotals					
Residential	\$25,990	6,599	101,180	535	5.25
Income Eligible	\$30,220	1,837	30,430	155	2.05
Business*	\$22,156	9,490	88,693	469	7.01

Portfolio	\$15,035	0	0	0	0.00
Totals	\$93,400	17,926	220,303	1,159	4.08
Subtotals, Including Allocated Portfolio Function Costs					
Residential	\$31,214	6,599	101,180	535	4.55
Income Eligible	\$35,779	1,837	30,430	155	1.69
Business	\$26,406	9,490	88,693	469	5.88
Total	\$93,400	17,926	220,303	1,159	4.08
<i>* Business Programs include annual funding of \$6.64M for Public Sector offerings, not including allocated portfolio function costs.</i> <i>** Emerging Technology is not projecting any savings and Market Transformation includes all program costs and the projected savings are included in the Residential Program savings.</i>					

Table 4 Amended EEP 4-Year Total Spending and Savings Targets (Budgets and Savings in Thousands)

Thousands (000)	Total Budget	Total Savings (Therms)	Lifecycle Savings (Therms)	Lifecycle GHG Savings (Tons)	TRC Benefit/Cost Ratio
Residential Programs					
HEER	\$26,555	11,875	209,158	1,107	6.49
HES	\$34,197	3,947	73,644	390	3.96
Multi-Family	\$13,021	1,841	26,574	141	3.70
Outreach	\$13,146	6,091	50,585	268	7.06
Smart Neighborhood Builder	\$6,678	1,495	26,247	139	5.11
Income Eligible Programs					
IE Weatherization	\$81,763	3,296	60,025	318	1.37
IE HEA	\$5,585	508	5,620	30	1.99
IE PHA	\$3,426	112	1,628	9	0.85
IE AHNC	\$3,636	190	3,922	21	1.86
IE ESK	\$6,900	2,859	40,762	216	13.77
Moderate Income	\$6,600	180	3,521	19	1.18
Business Programs*					
BEER	\$23,134	15,999	116,196	615	10.57
C&I New Construction	\$3,056	265	5,461	29	2.40
Business Custom	\$34,032	8,639	132,074	699	5.41
SB	\$13,221	6,573	49,272	261	6.81
Strategic Energy Management	\$5,977	4,556	31,892	169	11.25
Portfolio Functions					

Emerging Technology**	\$8,040				
Market Transformation**	\$14,500				
Market Development Initiative	\$10,950				
Program Evaluation	\$8,640				
Portfolio Management	\$10,482				
Portfolio Marketing	\$4,460				
Subtotals					
Residential	\$93,598	25,249	386,208	2,043	5.39
Income Eligible	\$107,910	7,144	115,478	611	2.12
Business*	\$79,420	36,032	334,896	1,772	7.09
Portfolio	\$57,072	0	0	0	0.00
Totals	\$338,000	68,425	836,582	4,426	4.17
Subtotals, Including Allocated Portfolio Function Costs					
Residential	\$112,638	25,249	386,208	2,043	4.75
Income Eligible	\$129,808	7,144	115,478	611	1.77
Business*	\$95,554	36,032	334,896	1,772	6.08
Total	\$338,000	68,425	836,582	4,426	4.17

* Business Programs include 30% of the business budget or \$25.7 million in funding for Public Sector offerings over the 4 years.

** Emerging Technology is not projecting any savings and Market Transformation includes all program costs and the projected savings are included in the Residential Program savings.

Table 5 provides the costs, savings, and cost per therm for the portfolio, without rounding.

Table 5 Nicor Gas Proposed Amended EEP 2026-2029 Budget and Goal Summary

Thousands	2026	2027	2028	2029	Total
Budget (\$)	\$57,800,000	\$93,400,000	\$93,400,000	\$93,400,000	\$338,000,000
Annual Savings Goal (Therms)	14,647,905	18,065,378	17,926,018	17,785,892	68,425,193
Lifecycle Savings Goal (Therms)	175,672,278	223,102,081	220,304,895	217,500,020	836,579,274
Annual Savings Dollar /Therm	3.95	5.17	5.21	5.25	4.94
Lifecycle Savings Dollar /Therm	0.33	0.42	0.42	0.43	0.40

1.10 Planning Objectives

Because Nicor Gas cannot meet the statutory savings goals with the resources available within the 2% statutory budget cap, the Company developed a portfolio that provides substantial savings, but that also meets a number of other, competing objectives important for portfolio success. These are outlined in Table 6.

Table 6 Nicor Gas Energy Efficiency Portfolio Objectives

Planning Objective	Consideration
Budget	- Expand spending beyond the 2% statutory budget. - Meet statutory budget minimums for income-eligible and public sector offerings. - Maintain budgets near the statutory guidelines for emerging technology, market transformation, and EM&V.
Cost Effectiveness	- Demonstrate that overall portfolio is cost effective using TRC test. - Analyze cost effectiveness of individual measures and programs. - Analyze cost effectiveness using the Program Administrator Cost test. - Analyze sensitivity of cost-effectiveness to non-energy impacts and IE programs.
Energy Savings	- Save annual/first-year therms. - Save lifecycle therms with an average saving life greater than 12 years. - Reduced GHG emissions - Help customers reduce monthly gas bills.
Reach	Provide diverse cross section of opportunities for customers of all rate classes.
Affordability	- Prioritizing weatherization and dedicating a portion of program funding to low-income and moderate-income households. - Amortizing expanded investments to reduce the cost recovery impact to customers.
Innovation	- Invest in the future through Emerging Technology and Market Transformation initiatives. - Support a culture of continuous improvement throughout the portfolio.
Market Consistency	Maintain stability for Trade Ally partners.
Economic Development	Increase jobs and economic activity in Northern Illinois with a dedicated focus on underserved communities.

Budget

The 4-year portfolio budget exceeds the Section 8-104(c) 2% cap limits of \$248 million. The portfolio must also meet minimum spending requirements for income-eligible and public sector customers, and also fund necessary investments in emerging technology, market transformation, MDI, EM&V, and other portfolio support functions.

Cost Effectiveness

The Act requires that the overall portfolio, excluding IE programs, be cost effective using the TRC test. Nicor Gas went beyond this statutory requirement to also analyze the cost-effectiveness of individual programs and measures and to analyze results of the program administrator cost (PAC) test, which measures the portfolio's impact on Nicor Gas revenue requirements. Nicor Gas also analyzed the sensitivity of results to the benefits provided by some non-energy-impacts in the TRC test, as well as the

sensitivity of portfolio results to the cost-effectiveness of IE programs. Section 8-104(b) and 8-104(f)(5) of the Act specify that IE programs do not need to be cost effective.

Nicor Gas did not apply the TRC test as a strict screening criterion for individual programs or measures. Nicor Gas includes some measures with TRC ratios below 1.0 if they provide substantial sources of therm savings, if they increase opportunities for customer participation, or they otherwise contribute to portfolio success. For example, some measures provide low-cost entry points for customers to participate, others eliminate market confusion by simplifying overall program offerings, and others provide bundling opportunities that drive participation in more cost-effective measures.

Savings

Section 8-104(e-20) establishes savings goals that are measured in “annual” or “first year” savings; that is, new savings added to the portfolio in each year of portfolio operation. However, because some portfolio measures have very short lifetimes (e.g., savings from boiler tune ups only last for 3 years) while others last much longer (e.g., attic insulation has a useful life of 20 years), and savings soon to be generated from Market Transformation efforts may extend even further, the first-year savings metric does not capture the full benefits associated with plan investments. Nicor Gas considers both lifecycle and annual savings in designing the portfolio, generally favoring offerings with low lifecycle savings cost, but also including offerings with low annual costs that help support other plan goals.

Southern Company Gas and Nicor Gas are working to reduce greenhouse gas emissions across the natural gas value chain, including empowering customers to meet their own sustainability goals. The work performed under this plan allows Nicor Gas to partner with businesses, municipalities, and households throughout Northern Illinois in achieving their own greenhouse gas objectives as well as any future statewide reduction plan.

Equity

Section 8-104(f)(5) requires Nicor Gas to provide programs that “represent a diverse cross section of opportunities for customers of all rate classes to participate”. Going beyond rate classes, Nicor Gas has also designed its portfolio to provide meaningful opportunities for all customers to participate, including large and small customers, owners and renters, households of all income levels, customers in new construction and existing buildings, small, large, and nonprofit businesses, and a wide range of additional market segments.

Nicor Gas’ ultimate parent company, Southern Company, has committed to meeting net zero carbon operations by 2050. This goal is inclusive of Southern Company Gas, Nicor Gas’ direct parent company. While customer end use emissions are not currently included in the net zero operational goal, Southern Company Gas and Nicor Gas are working to reduce greenhouse gas emissions across the natural gas value chain, including empowering customers to meet their own sustainability goals. The work performed under this plan allows Nicor Gas to partner with businesses, municipalities, and households throughout Northern Illinois in achieving their own greenhouse gas objectives as well as any future statewide reduction plan.

Affordability

Nicor Gas’s expanded energy efficiency program is cost-effective, deliver greater gas savings and emissions reductions, and improve affordability, by prioritizing weatherization and dedicating a portion of program funding to low-income households.

The portfolio makes substantial investments to expand opportunity in underserved communities, including low-income communities, people of color, and other groups who have been underserved by the portfolio. The proposed Amended EEP funds activities to increase participation from these communities, including participation from customers, as well as the workers and businesses that will be the direct focus of the MDI offering. Nicor Gas will work with stakeholders in those communities to target this investment, and will create metrics to track activity, spending, and participation in each of these key areas.

Innovation

The portfolio invests in the future by supporting the Emerging Technology program to identify promising new technologies and the Market Transformation program to produce long-term, structural changes in targeted markets. The portfolio also emphasizes an overall culture of continuous improvement in all portfolio programs and support functions.

Market Consistency

Nicor Gas relies on an extensive network of contractors, retail stores, and professional service firms to provide customers with the products and services that meet the energy savings goals of the portfolio. In developing and executing the Plan, Nicor Gas balances programs driven by external market forces with programs that Nicor Gas can control internally—to some extent—through promotion and pricing. These market-based programs include the rebate and new construction programs with markets driven by equipment failure and building construction. Programs allowing more internal influence include programs promoting kits, direct measure installations, and behavior change. A broad portfolio allows Nicor Gas to manage overall budget and savings levels when external forces change demand for the market driven programs. For example, if extremely cold weather increases demand for furnace replacements, the Program can adjust promotion or rebate levels to defer participation in the kit and direct installation programs.

Economic Development

Nicor Gas is committed to using energy efficiency to support economic growth and employment in Northern Illinois. The proposed Amended EEP drives the economy directly by funding local businesses to deliver the portfolio through installations of furnaces, insulation, and other measures, as well as the services required for portfolio execution including program management, marketing, evaluation and other services. This will be a major focus of the MDI offering. The proposed Amended EEP also generates indirect and induced impacts from the effects the programs have on the net incomes of the business and households who benefit from program savings, pay for the programs through rates, and profit from delivering energy efficiency services. Nicor Gas works with their independent evaluator to track the net impacts of these direct and indirect effects on the local and national economy, including impacts on overall economic activity, wages, and jobs.

1.11 Meeting the standards of Section 8-104 of the Act

The proposed Amended EEP meets all applicable requirements of Section 8-104¹ of the Act, including the requirements of new subsections (e-7), (e-8), (e-20), and (m-1) as enacted by CRGA, and as outlined in Table 7.

Table 7 Requirements of Section 8-104

Sub Section	Plan Cross Reference
8-104(e-5)	(e-5): The EEP includes offerings available to public sector customers, assigning 10% of total spending to the public sector; unless a utility files a plan or amended plan under the provisions of subsection (e-20), in which case the minimum spend for measures from such public customers shall be equal to at least 30% of non-residential spending. Public sector is defined as “local government, municipal corporations, school districts, and community college districts” as described in Section 1.8. Public Sector customers are served by all of the business programs described in Chapter 4. (e-5): The EEP includes programs designed for low-income customers that are “at or below 80% of area median income”, with funding for these offerings exceeding the amount “proportionate to the share of total annual utility revenues in Illinois from households at or below 150% of the poverty level” as described in Section 1.8. Descriptions of the offerings available to low-income customers are provided in Chapter 3, covering IE programs, and in Chapter 2, covering residential programs also available to income-eligible customers. (e-5): The EEP includes funds set aside for market transformation initiatives as described in Section 1.8, as well as in the Market Transformation program description provided in Section 5.3.
8-104(f)	The proposed Amended Plan document Amended Plan document was filed with the Commission pursuant to Section 8-104(e-20) of the Act. (f) (1): Appendix A shows the list of measures Nicor Gas will offer to meet proposed modified goals defined in Section 1.8. (f) (2): The proposed Amended EEP addresses new buildings and appliance standards in descriptions of the code compliance and stretch code activities included in the Market Transformation description Chapter 5.2. (f) (3): Nicor Gas’ calculation of the average per therm cost for the rate classes under its Rider 30, Energy Efficiency

¹ <http://www.ilga.gov/legislation/ilcs/fulltext.asp?DocName=022000050K8-104>.

Sub Section	Plan Cross Reference
	Plan Cost Recovery, is presented in the Company's direct testimony filed contemporaneously with the plan. (f) (5): The overall portfolio of energy efficiency measures, not including the Income-Eligible program covered by Section 8-104(e-5), is cost effective using the TRC test. Please see Table 29 in Section 7.3 for TRC results of proposed programs and the overall portfolio (f) (7): Nicor Gas' Rider 30, Energy Efficiency Plan Cost Recovery, was initially approved by the Commission in Docket No. 10-0562. Nicor Gas proposed certain changes to Rider 30 to comply with modifications to Section 8-104 that resulted from FEJA and those changes were approved by the Commission and went into effect on June 1, 2017. Rider 30 meets the requirements of Section 8-104(f)(7). (f) (8): The EEP includes funds set aside for EM&V as described in Section 1.8, as well as in the EM&V function description provided in Section 6.4.
8-104(g)	The proposed Amended EEP includes funds set aside for Emerging Technology initiatives as described in Section 1.8, as well as in the Emerging Technology program description provided in Section 5.2.
8-104 (e-20)	The amended plan document must be filed with the Commission on or before June 1, 2026. (e-20) The provisions of this subsection (e-20) shall be applicable to those multi-year plans that commence after the effective date of this amendatory act of the 104th General Assembly and are submitted by utilities that are single fuel service utilities as of the effective date of this act. A natural gas utility may propose, as part of its submission of a multi-year plan, to increase the amount of energy efficiency implemented in any multi-year planning period above the level that can be achieved under the spending cap set forth in subsection (d) of this Section. The first such plan to increase energy efficiency may be submitted as an amendment to the utility's plan for calendar years 2027 through 2029, but any such amended plans must be filed with the Commission by June 1, 2026. In addition to the policy goals established in subsection (f) of this section, the Commission shall consider, in determining the appropriateness of such a proposal, whether the multi-year plan at a minimum: (1) Identifies a cost-effective portfolio of measures and specifies the natural gas savings that are reasonably likely to be achieved by the utility; (2) Demonstrates that the plan or amended plan, at a minimum, will result in a portfolio of energy efficiency measures that will provide more natural gas savings than

Sub Section	Plan Cross Reference
	would have been achieved in a plan subject to subsection (c) of this Section; (4) Demonstrates that the plan reflects efforts to coordinate delivery of electric utility efficiency programs where such coordination can reduce costs, increase effectiveness of outreach to customers, or increase savings. A gas utility may count electricity savings towards its gas efficiency savings goals subject to the following limitations: (A) only electricity savings produced as a result of the installation of a gas efficiency measure, such as reductions in electricity consumption by gas furnace fans and electric air conditioners that results from the installation of insulation measures that reduce gas used for space heating, can be counted; (B) such electricity savings can only be counted when generated in service territories not served by electric utilities subject to 220 ILCS 5/8-103B; (C) no more than 5% of the total savings claimed towards a gas utility's savings goal may be from such electricity savings. For the purposes of this section, a kilowatt-hour of savings shall be equal to 0.03412 gas therms. (5) Demonstrates whether an increase in funding is necessary to meet the proposed increase in the amount of energy efficiency; (6) Prioritizes income-qualified measures, and weatherization measures. (7) Demonstrates that the multi-year plan strikes a reasonable balance between the goals of: (A) increasing cost-effective efficiency savings and related greenhouse gas emission reductions; (B) reducing overall gas system costs, recognizing that efficiency investments reduce usage and, in turn, potentially the need for system investments over the long-term; (C) increasing energy affordability, especially for low-income customers; (D) within the residential sector, prioritizing investment in weatherization and other measures that reduce heating loads over gas equipment measures; (E) providing a diverse cross-section of opportunities for customers of all rate classes to participate in efficiency programs.

Sub Section	Plan Cross Reference
	(8) As part of its order approving the plan or amended plan, the Commission is authorized to: (A) adjust the limitation on the amount of energy efficiency measures implemented pursuant to subsection (d) of this Section to the extent necessary to meet the increase in the amount of energy efficiency approved by the Commission pursuant to this subsection; (B) adjust the public sector spending requirements pursuant to paragraph (e-5) of this section; (C) adopt an incentive mechanism for the utility to meet or exceed the goals associated with its proposed multi-year plan if the utility meets or exceeds the following minimum requirements: (i) Proposing a plan budget over the applicable multi-year period that is equal to or greater than 5% of the amounts paid by non-opt-out retail customers in connection with natural gas service in the applicable multi-year period. (ii) For efficiency program years 2027 through 2029, achieving average incremental annual savings of at least 0.7% of average annual gas sales to non-opt-out retail customers over the years 2023 through 2025. For multi-year efficiency program plans beginning after 2029, achieving average incremental annual savings of at least 0.8% of average annual gas sales to non-opt-out retail customers during the three-year period ending two years prior to the first year of the plan. In all multi-year periods, the minimum incremental annual savings requirement shall be reduced by 0.01 percentage points for every 1 percentage point increase in low-income or moderate-income spending above the minimum levels required by subsection (e-5) of this Section. In no event shall the minimum incremental annual savings requirement be reduced by more than 0.10 percentage points even if low-income or moderate-income spending is increased by more than 10 percentage points above the minimum levels required by subsection (e-5) of this Section. For the purposes of this Section, "moderate-income" means income between 80% of area median income and 300% of the federal poverty limit. The Commission may reduce the magnitude of the minimum savings requirements in this paragraph if the utility can demonstrate that it is not possible to achieve them with a budget equal to 5% of revenues from eligible customers while meeting other minimum requirements. If a utility attempts to demonstrate that it cannot meet the minimum savings

Sub Section	Plan Cross Reference
	requirements in this paragraph with a budget equal to 5% of revenues from eligible customers, and the Commission finds that the utility has not made a sufficiently compelling demonstration, the utility may withdraw its plan and file a revised plan. (iii) Achieving an average savings life of at least 12 years, where average savings life is defined as (i) the savings that will be realized as a result of a utility's efficiency programs over the lives of all efficiency measures divided by (ii) the savings that will be produced in the first year after such measures are installed. Average savings lives may be shorter than the average operational lives of measures if the measures do not produce savings in every year in which they operate or if the savings that measures produce decline during their operational lives. (iv) Spending at least 67% of all financial incentive dollars on efficiency measures that (1) reduce the space heating loads of buildings through improvements such as to building envelopes, ventilation systems, space heating distribution systems, and space heating system controls; (2) reduce the water heating loads of buildings such as through insulation of hot water pipes, recovery and reuse of heat from waste water and reductions in the amount of hot water required to meet customer needs; or (3) reduce the process heat loads of industrial facilities. Any spending on health and safety measures shall count towards this requirement. No financial incentive spending on furnaces, boilers, water heaters and other gas-consuming equipment may be counted towards this requirement. (D) For amended plans, require a compliance filing from the utility to adjust budgets and natural gas savings targets, if necessary, to reflect the final level of customers opting out under subsection (m-1) of this Section.

1.12 Organization of this Report

The following chapters outline the key features and planning assumptions for the portfolio:

- Chapter 2 describes the residential programs
- Chapter 3 describes the income-eligible programs

- Chapter 4 describes the business programs
- Chapter 5 describes the innovation initiatives, including the Emerging Technology and Market Transformation programs
- Chapter 6 summarizes the support functions necessary to successfully deliver the portfolio, including MDI
- Chapter 7 summarizes key portfolio planning and technical assumptions
- Appendix A provides detailed tables outlining spending, savings, participation, and cost effectiveness for each program and measure
- Appendix B, provides the adjustable goals template to be used in the future, consistent with provisions in the Energy Efficiency Policy Manual, to calculate goal adjustments that result from annual TRM updates, annual NTG updates, independent evaluation to confirm it is done accurately, and changes in contributions from ComEd toward joint program costs

2 Residential Programs

2.1 Residential Overview

This chapter describes the Nicor Gas Energy Efficiency Program's proposed portfolio of residential energy efficiency offerings. The residential portfolio includes energy efficiency education and outreach, energy assessments, and incentives for high-efficiency equipment, weatherization, and new construction.

The portfolio is available to all residential customers living in both single-family and small multi-family residences (up to two units). Since small multi-family buildings are similar to detached houses in terms of their equipment and construction, Nicor Gas tracks program activity, spending and savings for these residences within its broader single-family offerings. Nicor Gas has a separate multi-family offering for larger buildings with at least three living units per building.

Nicor Gas has a separate set of programs specifically designed for Income-Eligible (IE) customers, which are described in Chapter 3. These IE programs are always free to participating customers and include additional services that make it easier for customers to follow through with project implementation. While IE customers are welcome to participate in the market rate residential programs, especially offerings requiring no cost to customers, they are also encouraged to participate in the more generous IE portfolio.

The residential portfolio is designed using a holistic approach, encouraging Nicor Gas' residential customers to make their entire living environments more energy efficient. Additionally, our team will focus on offering service-oriented energy-saving solutions. This will be done with the help of customer outreach, program team members and trade ally partners. Where appropriate, Nicor Gas will also partner with Ameren, Peoples Gas and North Shore Gas to deliver some programs. Nicor Gas believes that these collaboration efforts will result in increased savings and convenience for customers by capturing both electric and natural gas measures within the same project.

2.2 Home Energy Efficiency Rebate Program

Objective

The objective of the Home Energy Efficiency Rebate (HEER) program is to obtain energy savings by overcoming market barriers to the purchase and installation of high-efficiency natural gas space and water heating equipment and other targeted measures in residential applications.

Target Market

The program focuses on single-family and small multi-family (up to 2 units) property owners and tenants installing existing natural gas space heating and water heating equipment.

Collaboration

The natural gas space and water heating measures are generally delivered exclusively by the Nicor Gas Energy Efficiency Program. Smart thermostats may be coordinated with ComEd and other utility program administrators.

Offerings

This program provides incentives for the purchase and installation of high-efficiency natural gas space and water heating equipment and other targeted measures in residential applications. Customers are encouraged to install the most efficient gas heating equipment and appliances available when replacing older, less efficient equipment. Program participants also may be eligible for on-bill financing, which reduces the upfront expense to the customer for their energy efficiency purchase.

As new emerging high-efficient gas technologies come to market, within the 4-year timespan of this plan, they may be integrated into the program as eligible measures.

Delivery Strategy

Customers can participate in this program in one of two ways. First, customers can hire a Contractor Circle installing member (CCim) to install the efficient equipment and will receive an instant rebate at the time of installation, eliminating the need for the customer to submit a rebate application. CCims are knowledgeable about Nicor Gas rebate offerings, so they can educate the customer on available incentives. Only Contractor Circle members can offer the instant discount. In this model, the CCim is the trusted source who helps ensure that customers install energy-efficient equipment, and the CCim receives the rebate for qualifying equipment.

Alternatively, customers can use a contractor of their choosing, even if they are not a Contractor Circle member. In these cases, customers submit rebate applications themselves and can choose to receive rebates as prepaid cards, virtual wallet payments and checks.

Education and Outreach Strategy

The driving force behind HEER is a combination of direct communication to customers and effective outreach to trade allies (installing contractors, distributors, manufacturers, etc.) and other partners (municipalities, community organizations, etc.) to increase program engagement.

Strategic advertising is one of our primary education tactics, specifically in the digital space. Additional communications tactics, such as bill inserts and email blasts, complement the strategic advertising elements. Community partnerships, events and media campaigns play a large role in educating customers about these offerings, as well as establishing trust between Nicor Gas, the customer and the community.

Trade ally participation will also be key to achieving our program goals. The Nicor Gas trade ally outreach team supports trade allies by:

- Educating trade allies about the offerings and providing program support via calls, email, in-person meetings, webinars, training events and/or virtual meetings
- Providing tools and resources to help the trade ally provide a great customer experience
- Supporting/attending trade ally events, training, conference, and other industry events
- Hosting roundtable meetings which are used to share program information and solicit feedback from the participating contractors
- Recruiting non-Contractor Circle members to encourage them to join the network

Innovation

The program will incorporate gas heat pumps as they become more commercially available in coordination with the innovation programs outlined in Chapter 5.

The program will also stay on top of the latest residential technologies, such as triple pane windows and water heating technologies. The program will look to include these technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in measure summary report in Appendix A. The key measures in the HEER program include:

- High-efficiency residential furnaces
- High-efficiency residential boilers
- Combination boiler
- Tankless water heaters
- Storage water heater
- Smart thermostats
- Pool Covers
- Gas heat pump
- ASHP with new or existing furnace

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 8 below. Please note the figures are rounded to thousands.

Table 8 HEER Program Targets

THERMS	
Gross Therms	12,046
Net Therms	11,875
Lifecycle Gross Therms	212,386
Lifecycle Net Therms	209,155
BUDGET	
Implementation Cost	10,645
Incentive Cost	15,910
Total	26,555
\$ / Therm	
\$ / Gross Therm	\$2.20
\$ / Net Therm	\$2.24

\$ / Lifecycle Gross Therm	\$0.13
\$ / Lifecycle Net Therm	\$0.13
COST EFFECTIVENESS	
TRC	6.49
PAC	3.51

2.3 Home Energy Savings Program

Objective

The Home Energy Savings (HES) program helps customers complete comprehensive retrofits in existing single-family buildings by providing financial, educational and logistical support to overcome key market barriers. The program promotes energy assessments with installation of energy-saving measures as well as the installation of building envelope improvements.

Target Market

HES targets customers with natural gas space heating in single-family homes or multi-family buildings with up to two units. The gas-only component targets Nicor Gas customers and may also include select municipalities serviced by municipal electric providers.

Collaboration

Nicor Gas will collaborate with ComEd to contribute electric savings from this program to their portfolio savings. Nicor Gas may also work with local municipal utilities and co-ops to develop coordinated offerings. Where there is not an electric partner, Nicor Gas provides gas-only offerings. No electric measures are installed during these gas-only assessments, and Nicor Gas pays full cost for joint fuel measures like thermostats and weatherization.

Offerings

The HES program includes two offerings: home energy assessments and weatherization rebates.

Home energy assessments

With home energy assessments, customers begin their energy efficiency journey by learning about offerings in the portfolio and what changes they can make in their homes. Energy advisors directly install energy-saving products at the time of the assessment and educate on how these products help save energy and money. Customized reports are created for each assessment, identifying additional savings opportunities, efficiency upgrades and available rebates. Direct installation measures include pipe insulation, showerheads, faucet aerators, programmable and advanced thermostats, as well as LED lamps and other electric measures where the Program has a partnership with an electric utility.

Customers can choose between in-person or self-assessments. After the self-assessment is complete, Nicor Gas delivers the energy-saving products to the customer's home for self-installation.

Nicor Gas also has a healthy home assessment in the Income-Eligible portfolio to target air quality, water quality, toxins and other safety issues along with energy efficiency.

Weatherization rebates

The weatherization rebate offering provides financial incentives to customers installing air sealing, insulation or duct sealing measures. This work must be performed by a contractor that is industry-certified and program-approved. After a customer has expressed interest in the program, a participating contractor schedules a site visit to the home. No assessment is required. The participating contractor completes the work and provides an instant discount to the customer (in other words, the contractor applies the incentive and deducts the cost directly on the bill to the customer).

Delivery Strategy

The Nicor Gas Energy Efficiency Program implementation contractor identifies, trains and employs a network of regional BPI-certified energy advisors to provide customer-specific energy efficiency recommendations. The air sealing, insulation, and duct sealing work is performed by program-approved trade allies that are pre-vetted to ensure they meet all program requirements. All installation work will meet rigid performance standards established by BPI, Nicor Gas, the partner electric/municipal utility, and the program vendor. This offering employs a systematic approach to home improvement that addresses all aspects of building systems.

Eligible customers who complete qualifying building envelope improvement projects can receive a rebate through the prescriptive offering of HES. Customers do not need to participate in the assessment offering in order to take advantage of the prescriptive offering. However, only program-approved trade allies can complete the work. Nicor Gas and the program vendor work together to train approved trade allies on program requirements.

Customer Outreach Strategy

This program may employ a variety of education and outreach tactics to increase customer participation, such as targeted emails, bill inserts and other microtargeted approaches. In addition, other program materials may be created to educate customers about the offering and additional ways to save. These materials can be used by the outreach team as well as participating trade allies and other partners to promote the offering.

The outreach team complements these efforts with community outreach, including events and community partnerships. The Marketing and Outreach Center also educates customers that call into the Energy Efficiency Program about the HES offering and can schedule assessments for customers during the call.

Innovation

The program may incorporate thin triple pane windows and other measures developed through the innovation programs described in Chapter 5 as they become commercially available. The program's virtual assessments and self-installation processes were also developed through continuous improvement efforts.

The program will also look to include other new technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the HES program include:

- Air sealing and attic insulation
- Basement sidewall and wall insulation
- Duct sealing
- Programmable or smart thermostats
- Weatherstripping
- Low-E storm windows
- High-Performance Windows

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 9 below. Please note the figures are rounded to thousands.

Table 9 HES Program Targets

THERMS	
Gross Therms	3,775
Net Therms	3,947
Lifecycle Gross Therms	70,875
Lifecycle Net Therms	73,644
BUDGET	
Implementation Cost	13,440
Incentive Cost	20,757
Total	34,197
\$ / Therm	
\$ / Gross Therm	\$9.06
\$ / Net Therm	\$8.66
\$ / Lifecycle Gross Therm	\$0.48
\$ / Lifecycle Net Therm	\$0.46
COST EFFECTIVENESS	
TRC	3.96
PAC	0.84

2.4 Multi-Family Program

Objective

The Multi-Family (MF) program addresses residential (living units) and common areas (central plants, laundry rooms, etc.) in multi-family buildings with 3 units or more. The program goal is to overcome market barriers to the installation of energy efficiency measures by offering comprehensive assessments, a range of rebate offerings, generous financial incentives (including free offerings), and technical assistance. The program employs a “one-stop shop” approach that allows customers to easily navigate the different services available to these customers across the Nicor Gas portfolio.

Target Market

The MF program targets property owners and managers of large multi-family buildings with three units or more that use natural gas for space or water heating. These include high-rise and low-rise buildings, town homes, condominiums, assisted living, retirement communities, school dormitories, and similar buildings.

Collaboration

Nicor Gas may offer this program jointly or in collaboration with other regional electric utilities, along with some gas-only segments.

Offerings

The program includes seven components that work together to provide customers with turnkey, umbrella services to drive comprehensive energy upgrades. The offerings include:

- Free energy assessments to identify comprehensive opportunities
- Free direct installation of low-cost measures in living units and common areas
- Prescriptive rebates for standard upgrades applicable to most buildings
- Custom rebates for more complex projects or other opportunities not covered by the other offerings
- Free or low-cost Central Plant Optimization (CPOP) to upgrade centralized boiler systems
- Structured weatherization rebates for air sealing and insulation projects
- Technical assistance to help customers navigate the program, take advantage of all program services, coordinate with other offerings, and follow through to implement projects

The program also coordinates with the on-bill financing and income-eligible offerings to help customers take advantage of these other offerings when appropriate. The goal is to ensure that customers have all the information needed to easily choose the best offerings for their buildings and to help them follow through to execute those choices.

Delivery Strategy

The delivery strategy is to provide turnkey, umbrella services that help customers save energy, increase tenant comfort, and improve property values.

Delivery begins with effective outreach to multi-family building owners, property management companies, apartment and rental associations, business trade and community associations, and trade allies serving

the multi-family market. The program relies heavily on one-on-one engagement with building owners, property managers and trade allies to promote the program and provide technical assistance. Program education requires direct outreach, and participation often requires several touch points. Outreach targets are encouraged to begin the program workflow by scheduling a comprehensive energy assessment.

Assessments

During outreach, and while scheduling the assessment, participants are informed of income-eligible offerings, which provide free incentives for all measures and upgrades. If customers qualify, they are channeled through the income-eligible intake process, which uses consistent intake forms and systems for a seamless customer experience.

Once scheduled, the program staff conducts the free energy assessment to identify program opportunities. Customers receive tailored reports, outlining recommendations for each of the other program tracks. Customers are assigned a lead contact to navigate the program process, beginning with a review of the assessment recommendations and next steps. The contact also provides information on financing options to help pay for the upgrades, including the Nicor Gas On-Bill Financing initiative, as well as other market financing options.

Direct Installation

In the direct installation offering, program staff install free measures in living units and common areas, including low-flow showerheads, faucet aerators, pipe wrap, shower timers, thermostatic radiator valves and programmable thermostats. Customers can also receive advanced thermostats for an associated co-pay. Customers can choose between two installation options: 1) the property manager can schedule installation by the program staff, or 2) they can utilize “virtual direct installation” where products are shipped directly to the property manager for self-installation.

Rebates and custom incentives

The assessment covers a comprehensive set of prescriptive and custom rebate opportunities. Prescriptive projects receive fixed rebates for standard upgrades applicable to most buildings, including efficient furnaces, boilers, water heaters, laundry equipment, and similar measures. Custom measures include projects not covered by the prescriptive offering, and rebates are based on measured energy savings. The program contact helps the customer identify projects for implementation and guides them through the Nicor Gas Find-a-Contractor web tool to identify Contractor Circle members who can complete the installations. Building owners can also use their own contractor or internal maintenance staff to perform the work.

Central Plant Optimization (CPOP)

In the CPOP offering, the program contact works with customers to schedule a program-approved contractor to provide free central plant upgrades, including boiler tune-ups, boiler controls, pipe and tank insulation, and steam trap testing and repair.

Multi-family Weatherization

In the Weatherization offering, customers receive structured rebates for air sealing, insulation, and other measures installed by BPI-certified contractors. The rebates will be structured per cubic foot of infiltration reduction, or square foot of insulated area. Program contacts will help customers sequence comprehensive projects that pair weatherization and heating upgrades. Since weatherization upgrades

reduce peak heating requirements, these customers can save additional money by downsizing heating equipment.

Customer Outreach Strategy

Nicor Gas employs a comprehensive multi-family education and outreach strategy. The program partners with property management companies to secure agreements that treat multiple properties through a single point of contact and engages with smaller organizations managing individual properties. General outreach may occur through advertisements in apartment association publications or via local apartment and rental association meetings, industry events, and conferences. These tactics drive general program awareness and help develop relationships. As partnerships evolve, presentations at local properties, rental and owner association meetings, and other forums help recruit participants. The marketing team will collaborate across the Nicor Gas portfolio and with partnering utilities to create program materials and provide a uniform “one-stop shop” that simplifies and facilitates customer engagement.

During the outreach process, Nicor Gas will ensure that owners and managers understand the income-eligible offerings that provide additional free services, more generous financial incentives, and—for the Healthy Home initiative—broader services. Outreach activities will also cover on-bill financing options that customers can use to finance upgrades. The goal is to ensure that customers have all the information needed to easily choose the best offerings for their buildings.

Innovation

The program may incorporate measures developed through the innovation programs described in Chapter 5, as well as new delivery strategies developed through continuous improvement activities.

The program will also stay on top of the latest commercial and industrial technologies, such as gas heat pump technologies, advanced windows, ventilation air deflectors, hybrid designs, on-site renewables, and other innovations. The program may look to include these technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the MF program include:

- Free assessment and report
- Free direct installation of low-flow showerheads, bath and kitchen aerators, shower timers, thermostatic radiator valves, and programmable thermostats
- Direct installation of advanced thermostats, with co-pay
- Prescriptive rebates for furnaces, boilers, water heating, laundry equipment, and other measures
- Custom incentives for measures not covered by prescriptive rebates
- Free or low-cost installation of CPOP services, including boiler tune-ups, pipe insulation, steam traps, and other measures that optimize heating system performance
- Structured rebates for air sealing, duct sealing and insulation measures

Please see the measure summary report in Appendix A for more details.

Program Targets

The program budget and savings targets are provided in Table 10 below. Please note the figures are rounded to thousands.

Table 10 MF Program Targets

THERMS	
Gross Therms	1,874
Net Therms	1,841
Lifecycle Gross Therms	27,067
Lifecycle Net Therms	26,574
BUDGET	
Implementation Cost	6,682
Incentive Cost	6,339
Total	13,021
\$ / Therm	
\$ / Gross Therm	\$6.95
\$ / Net Therm	\$7.07
\$ / Lifecycle Gross Therm	\$0.48
\$ / Lifecycle Net Therm	\$0.49
COST EFFECTIVENESS	
TRC	3.70
PAC	0.87

2.5 Energy Education and Outreach Program

Objective

The Energy Education and Outreach program's objective is to increase residential customers' understanding of energy usage in their homes and educate these customers on available energy efficiency opportunities.

Target Market

All residential customers served by Nicor Gas.

Collaboration

The program includes offerings that may be delivered jointly with electric utility partners for Energy Education Kits and by Nicor Gas only for Energy-Saving Kits and Home Energy Reports.

Offerings

Energy education and outreach is the first step in a typical household's energy efficiency journey. The offerings in this program include:

- Customer-requested energy-saving kits
- Energy-saving kits distributed through community outreach events
- Energy education for elementary school students
- Behavior modification techniques that foster energy efficiency as part of everyday living

The offerings are further explained below.

Energy-Saving Kits (ESKs)

Nicor Gas will continue distributing free ESKs this cycle. There are two versions of ESKs, specifically 1) a water-saving kit and 2) a weatherization kit. The water-saving kit includes high-efficiency showerheads (1 or 2 per kit), a kitchen aerator, a shower timer and bathroom aerators (1 or 2 per kit). These devices conserve water, and therefore save the natural gas needed to heat the water. The weatherization kit includes weatherstripping, rope caulk, light switch and outlet gaskets, and a door sweep. These measures help seal air leaks to prevent drafts from entering the home, decrease air loss and reduce the energy needed to heat the home.

Energy Education Kits (EEKs)

The EEK offering is designed to educate elementary and high school students about using energy wisely. The curriculum provided in this program adheres to the academic standards set for ELA, Math, Next Generation Science, Technology and College and Career Readiness. These materials employ the universal design approach; they are flexible and easy to use by students of varying abilities. Each student will also receive an energy-saving kit, which may include natural gas and electricity-saving products, such as showerhead, aerators, shower timer, LED night light, smart plug, weatherstripping, door sweep, window insulation kit and domestic hot water pipe insulation. The curriculum teaches students and parents about how these products can save energy and encourages installation for class experiments as well as long-term use.

Home Energy Reports (HER)

This behavior modification offering generates energy savings through residential customer engagement and behavioral change strategies. This offering will provide individualized energy use information through HERs tailored to customer usage and habits to drive changes in energy usage behavior. HERs may use historical energy use data, customer demographics, and other information to provide personalized, actionable tips to customers. Information will be delivered to customers in multiple formats on a regular basis to provide education about natural gas consumption and energy efficiency opportunities.

Delivery Strategy

The program is delivered through the three offerings described above, with each representing a vital step of Nicor Gas' overall customer engagement strategy to save energy at home. The delivery strategy of each of the offerings is explained below.

ESKs

The ESKs are free to all Nicor Gas residential customers who request a kit. Customers can order a kit online through our website, by calling our outreach center, through community partners such as

community action agencies and other partners or by engaging with Nicor Gas at an event (virtual or in-person). In some cases, our marketing and outreach center may follow up with interested parties we became aware of through program cross-promotions, QAQC efforts, other utility departments (e.g. credit and collection, contact center, new business development), or external partners.

EEKs

The offering is delivered by engaging schools and teachers. Teachers that enroll are provided with educational materials, lesson plans, student guides, workbooks and other engaging activities that can be used inside and outside the classroom. Further, Nicor Gas plans on focusing its delivery of kits toward income-eligible customers. Nicor Gas may choose schools that are located in areas where a significant portion of low-and-moderate income homes exist based on data driven approaches.

Two different EEKs are delivered depending upon whether school is in a territory shared with electric partners, and Nicor Gas-only territory. Kits distributed to schools in the joint areas include both energy-saving electric and gas measures while the Nicor Gas-only areas include energy-saving gas-only measures (unless an electric provider is identified to contribute toward the electric measures in the kit).

HER

Customers receive HERs on a regular basis via email and have access to an online portal hosted by the implementation contractor. Customers also receive high usage alerts via email. The HER is customized to user data and area trends. This information allows the customer to see how their home is performing regarding natural gas usage compared to homes of similar size in their area. Each report also contains customized, seasonal tips to help make easy energy-saving improvements. Tips may also include promotions for free offerings and other program messaging to drive participation.

Customer Outreach Strategy

These offerings provide the Nicor Gas Energy Efficiency outreach representatives an opportunity to interact with customers, teach them about the importance of energy efficiency and show why they should participate in our programs. Like with any brand, the first participation level is the hardest to garner from customers, but once trust is established, continued participation is easier to achieve.

The Nicor Gas Energy Efficiency Program will use a concierge-like service through the Marketing and Outreach Center to proactively engage customers. Additionally, offerings such as the energy-saving kits and the energy education kits present a great opportunity to reach out to low-and-moderate income customers as well as multicultural markets, which will be areas of focus.

ESKs

The main education and outreach distribution channels to market ESKs are utility bill inserts, outreach events, targeted emails, website promotions, social media posts and partnering with community partners and Community Action Agencies. These tactics have been the most effective way to penetrate different customer segments, such as multicultural markets and low-to-moderate income populations. Additionally, through the energy-saving kits, our team can gather additional customer information in order to promote other offerings in the portfolio.

EEKs

Although the EEK promotion and communications is conducted primarily by the implementer (which includes school recruitment, online information and collateral development); the Nicor Gas team plays a significant role in reviewing the design of materials and assisting with media outreach opportunities. If a media event or engagement opportunity is deemed appropriate, it will be coordinated between the implementer, Nicor Gas and electric utility partners.

HER

The HER offering serves as both an education and outreach resource that doesn't require customer recruitment on the front end. The program itself serves as an additional promotional tool to customers and engages them in learning about, and participating in, other Nicor Gas energy efficiency offerings. The implementer will create and modify reports, emails, letters and website content with Nicor Gas marketing guidance and support.

Innovation

The shower timer in the water-saving kit was developed through ongoing continuous improvement efforts. The Nicor Gas Energy Efficiency team will also work to identify additional measures appropriate for this offering.

Eligible Measures

A comprehensive list of available measures are listed in Appendix A. The key measures in the Energy Education and Outreach program include:

- Energy-Saving Kits
- Elementary Education Kits
- Home Energy Reports

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 11 below. Please note the figures are rounded to thousands.

Table 11 Education and Outreach Targets

THERMS	
Gross Therms	6,516
Net Therms	6,091
Lifecycle Gross Therms	58,941
Lifecycle Net Therms	50,585
BUDGET	
Implementation Cost	6,412
Incentive Cost	6,734
Total	13,146
\$ / Therm	
\$ / Gross Therm	\$2.02
\$ / Net Therm	\$2.16
\$ / Lifecycle Gross Therm	\$0.22
\$ / Lifecycle Net Therm	\$0.26
COST EFFECTIVENESS	
TRC	7.06
PAC	1.25

2.6 Smart Neighborhood Builder Program

Objective

The objective of the Smart Neighborhood Builder (SNB) program is to obtain energy savings by increasing the energy efficiency of new construction single-family detached homes and townhomes. This program was inspired by Nicor Gas Smart Neighborhood initiative and promotes technologies to encourage builders to construct zero ready homes. The program provides participating new home builders and their verifier companies a financial incentive to exceed state and local building code requirements regarding duct and air sealing, along with the installation of specific high-efficiency space and water heating natural gas equipment and advanced thermostats.

Target Market

The target market for SNB includes homebuilders and their verifier companies that work together to build homes in Illinois.

Collaboration

SNB is a Nicor Gas-only offering.

Offerings

SNB works with homebuilders and their verifier companies to build homes in the Nicor Gas service territory that are safer, more comfortable, durable and energy efficient due to the installation of high-efficiency equipment, advanced thermostats and by exceeding duct and air sealing building code requirements. Verifiers are typically building rating companies or on-site contractors, but they can be any entity designated by the builder, or even the builder itself.

SNB provides monetary incentives for homebuilders and their verifier companies to promote energy-efficient new construction building practices.

Delivery Strategy

The key elements of the delivery strategy include:

Builder & Verifier Recruitment: The primary recruitment effort will target homebuilders and their verifier companies in the Nicor Gas service territory, with recruitment occurring through individual contact, group outreach, online events and involvement in regional builder associations.

Technical Assistance: The implementation contractor will provide training and guidance regarding program offerings and participation processes to builders and verifiers as needed to provide support and minimize barriers to participation.

Project Verification: Program verification will occur through independent verifier companies that participate in the program, as they are on-site during home construction and have access to the information required for program data submissions. This data is then uploaded to the implementer for QA/QC verification. The builder may also submit program data on its own behalf.

Communications, Education and Training: The implementation contractor is responsible for educating and training the homebuilders and their verifier companies. The implementation contractor in partnership with Nicor Gas will conduct periodic training sessions detailing the requirements and administrative functions for participating in the program. Builders and their verifier companies participating in the program will receive regular communications about program activities to ensure that they are informed and engaged participants.

Customer Outreach Strategy

The education and outreach strategy will focus on raising awareness and creating action among both homebuilders and their verifier companies that are directly involved in the process of constructing new single-family homes and duplexes. Messaging will emphasize the distinct advantages of using energy-efficient building practices and installing energy-efficient components throughout the construction process. The program will provide a tangible benefit/incentive to influence home builders and verifiers to participate.

The program will be promoted using various targeted communications tactics, including direct outreach, online events and involvement in regional home builder associations. The implementation contractor in partnership with Nicor Gas will provide all recruitment and training services for the program. The participating verifier companies are an integral link in promoting the program to homebuilders in addition

to the efforts by the implementation contractor. This comprehensive effort is intended to communicate the benefits of the program to homebuilders and motivate them to differentiate themselves in the marketplace by building energy-efficient homes. The implementation contractor is also responsible for leading the creation and development of all marketing materials, including webpage content, event presentations, and program fact sheets.

Innovation

The program will also stay on top of the latest in new construction practices and technologies, such as high-performance windows, gas heat pump technologies, hybrid designs, on-site renewables, microgrids, community designs, and other innovations around residential communities. The program will look to include these technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the SNB include:

- Furnace, >95% AFUE (Bronze tier package)
- Furnace, >97% AFUE (Silver tier package)
- Dual fuel heating system (Gold tier package)
- Above code duct and air sealing requirements (all tiers)
- High-efficiency natural gas water heaters (Silver and Gold tier packages)
- High Performance Windows (Bonus Measure)
- Water Sense Rated fixtures (Bonus Measure)
- Insulated Concrete Forms (Bonus Measure)

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 12 below. Please note the figures are rounded to thousands.

Table 12 SNB Program Targets

THERMS	
Gross Therms	2,263
Net Therms	1,495
Lifecycle Gross Therms	39,723
Lifecycle Net Therms	26,247
BUDGET	
Implementation Cost	2,030
Incentive Cost	4,648
Total	6,678
\$ / Therm	
\$ / Gross Therm	\$2.95
\$ / Net Therm	\$4.47
\$ / Lifecycle Gross Therm	\$0.17
\$ / Lifecycle Net Therm	\$0.25
COST EFFECTIVENESS	
TRC	5.11
PAC	2.25

Income-Eligible and Moderate-Income Programs

3.1 Income-Eligible and Moderate-Income Overview

This chapter describes the Nicor Gas Energy Efficiency Program's proposed programs for Income-Eligible (IE) and Moderate-Income (MI) customers. Section 8-104(e-5) of the Act defines IE customers as households with incomes at or below 80% of area median income (AMI), which is roughly equivalent to 300% of the federal poverty level. Moderate-income means *(i) for dual fuel service utilities, income between 80% and 100% of area median income; and (ii) for single fuel service gas utilities, income between 80% of area median income and 100% of area median income*. The IE and MI offerings provide opportunities to the most vulnerable customers in the Nicor Gas service territory. The IE and MI programs will be offered jointly or in collaboration with other Illinois utilities, state agencies, and local community action agencies (CAAs) and community-based organizations (CBOs).

This chapter covers the following programs:

- IE Weatherization, serving both single-family and multi-family buildings (IE Wx)
- Moderate Income (MI)
- IE Home Assessments (IE HA)
- IE Energy-Saving Kits (IE ESK)
- Public Housing Authority (PHA)
- Affordable Housing New Construction (AHNC)

Nicor Gas uses a one-stop-shop approach to help educate, guide and provide choices for IE customers to receive the services that best fit their needs. The IE offerings provide free single-family and multi-family home assessments and weatherization services, free upgrades for heating and water heating systems, free direct installation of low-cost measures such as showerheads and faucet aerators, and free kits with similar low-cost measures. Income Eligible Home Assessments (IE HA) are available to customers that meet the income eligibility requirements, and can choose an in-person, virtual or self-assessment option. IE HA is a direct-install offering, but it also acts as the intake service for the Retrofits weatherization offering that supplements IHWAP's capacity. The IE portfolio is designed to move customers from initial assessments and direct-install services toward comprehensive whole-building weatherization and retrofit opportunities whenever feasible. The assessors in IE HA will prioritize customers for Retrofits based on energy efficiency opportunities and health and safety findings. The IE portfolio also includes the PHA program, which provides free services and enhanced rebates for PHA buildings, and the AHNC program, which provides design assistance and financial incentives for developers of affordable housing.

The IE programs target homeowners and renters, as well as owners of multi-family buildings serving IE households. For program delivery and tracking purposes, Nicor Gas defines multi-family as buildings with at least three living units. Smaller multi-family buildings are tracked along with detached single-family residences.

Nicor Gas has designed the programs to leverage resources from the statewide IHWAP program, which for decades has administered federal- and state-funded programs to weatherize homes for low-income households. The largest offerings described in this chapter directly supplement these IHWAP programs, providing funds to expand IHWAP's reach into more homes, and directly using the infrastructure IHWAP has developed to deliver these services through a statewide network of CAAs.

The Nicor Gas IE/MI programs also serve key markets beyond the reach of the IHWAP program.

- Nicor Gas has created the Retrofits offering that supplements IHWAP's capacity. IHWAP limits participation to households with incomes below 200% of the federal poverty level, and the retrofits

offering serves additional customers with incomes up to 80% AMI, which is approximately 300% of the poverty level. The Retrofits offering also serves customers who cannot be served with current IHWAP capacity constraints, due to budget limits or technical limits at the local CAAs that deliver IHWAP services. For example, many CAAs do not have the expertise to retrofit multi-family buildings.

- Nicor Gas will create a Moderate Income program for customers earning between 80% and 100% of Area Median Income (AMI). Nicor Gas will create a Moderate- Income program for customers earning between 80% and 100% of Area Median Income (AMI). With an annual budget of \$2 million, the program will deliver free direct-install products and increased incentives for weatherization and HVAC replacement projects, requiring only a 10% customer contribution.
- Nicor Gas has created a Healthy Homes offering that partners with CBOs, healthcare providers, insurance companies, and other organizations to deliver comprehensive services to IE households that integrate energy efficiency with health, safety, and indoor air quality (IAQ) improvements. The Healthy Home offering is funded through the Nicor Gas Energy Efficiency Program and does not leverage IHWAP funding; however, it is designed to coordinate with and complement partner-led initiatives and, where appropriate, leverage external resources and non-utility funding to enhance customer outcomes and support healthier homes and communities.
- The PHA and AHNC programs target services to additional key markets. The PHA program serves agencies providing subsidized public housing and the AHNC program serves organizations building new affordable housing.
- The IE ESK program provides free measures to households who cannot be met within the capacity constraints of the other programs.

In the Settlement Stipulation reached with the Negotiating Parties, Nicor Gas made a number of agreements regarding the operation of the IE programs. While the detailed Stipulation language defines these specific agreements, key provisions include:

Spending and Financial Incentives

- Nicor Gas will spend an annual average of at least \$18.14 million per year in IE program spending (excluding IE customer participation in Market-Rate dedicated programs, innovation programs, or any other portfolio level costs).
- Nicor Gas will spend at least \$14.77 million per year on offerings providing whole-building retrofits. These programs include the IE Weatherization, IE AHNC and PHA programs.
- Nicor Gas shall spend at least 90% of IE whole-building program measure incentive spending on major measures, including weatherization/building envelope measures, HVAC distribution and ventilation measures, HVAC equipment, water heating equipment, appliance replacements, windows, and health and safety improvements.
- Nicor Gas will continue to provide all measures in the IE Weatherization IE HA and IE ESK programs free of charge, without co-pays.
- Nicor Gas will work with CAAs and other implementers to ensure that contractors do not assess charges for weatherization quotes.
- Nicor Gas will not actively market On-Bill Financing to IE customers.
- Nicor Gas will target services to communities with the greatest need, particularly to diverse and historically underserved communities, using data driven approaches to target investment. Nicor Gas will collaborate with other utilities and interested Stakeholders on data and approaches used to target services, assess bill impacts, and measure customer energy burden.

- Nicor Gas will spend, on average \$2M dollars, per year, on a Moderate Income program service both single family and multi-family customers. Nicor Gas will spend, on average \$2M dollars, per year, on a Moderate-Income program service both single family and multi-family customers.

Multi-family Program Operations

- Nicor Gas will spend at least 30% of the total IE budget on multi-family customers.
- In the multi-family Retrofits and Healthy Home offerings, Nicor Gas will support the full cost of air sealing and insulation upgrades that have an estimated payback of 20 years or less, unless there are technical limitations or customer objections.
- Nicor Gas will deliver multi-family services within a “one-stop shop” framework that makes it easy and streamlined for customers to navigate electric and natural gas offerings, IE and Market-Rate offerings, and EE and non-EE utility offerings. This framework will include a single point of contact, working with ComEd, other utilities, CAAs, or CBOs, to provide a common intake process, identify appropriate program services, coordinate program access, schedule, coordinate, and monitor work with qualified contractors, and resolve quality issues.

Health and Safety (H&S)

- Health and Safety (H&S) funding supports eligible measures required to enable energy efficiency installations in the IE Weatherization and Retrofits offerings, for both single-family and multi-family buildings, subject to offering-specific caps and delivery requirements.
- Nicor Gas will budget up to \$4.2M per year on average for IE H&S improvements for the whole building retrofit programs.
- Nicor Gas will budget approximately \$132k per year on average for MI H&S improvements to enable energy efficiency weatherization and upgrades.
- Nicor Gas will provide H&S funding for single-family Retrofits and Healthy Home projects. This cost will be split between utilities for jointly funded projects or 100% by Nicor Gas for Nicor Gas-only projects.
- Nicor Gas will provide H&S funding for multi-family Retrofits and Healthy Home projects that include up to \$2,000 per eligible measure or 50% of the total project, whichever is greater. This cost will be split between utilities for jointly funded projects or 100% by Nicor Gas for Nicor Gas-only projects.
- Nicor Gas will work with IHWAP to develop appropriate allocations of H&S funding for IHWAP projects.
- Nicor Gas commits to analyze and leverage external sources of funding for H&S improvements, if available.
- Nicor Gas commits to better understand the air sealing and insulation materials currently being used in IE retrofits; to limit or eliminate the worst, unhealthiest materials; and to work with utilities and other stakeholders to report on material use and identify options for healthier materials.

Affordability

- The Nicor Gas Energy Efficiency Program and Implementation Contractors will provide customers accessing energy efficiency programs with information about available energy assistance. Nicor Gas has created the Community Connection Center (C3) which is a free service that connects customers with a variety of support options including energy assistance, energy-saving offerings, basic needs assistance and so much more. The customer can navigate the options via our online

Community Assistance Navigator (CAN) or contact us to have one of our team members review available options directly with the customer. Including information on the Low-Income Home Energy Assistance Program (LIHEAP), Percentage of Income Payment Plans (PIPP), and all other utility-specific energy assistance programs. Information will be provided in English, Spanish, and other languages.

- The Nicor Gas Credit and Collections/Contact Center will utilize current systems to connect customers experiencing energy unaffordability to energy efficiency programs.
- Nicor Gas will continue to recruit customers at risk of being disconnected, with high arrears, on payment arrangements, or on energy assistance programs into its IE energy efficiency programs.

IHWAP Offerings

- Nicor Gas will leverage the efficiencies available through existing IHWAP infrastructure and services, such as enrollment and marketing, to the extent that this can reduce the need for similar services at a lower cost than utility-only programs, subject to CAA or other capacity constraints.
- Nicor Gas will seek input from and coordinate with CAAs on agency capacity and annual growth in utility funding budgeted to IHWAP braided efforts.
- Nicor Gas will braid IHWAP funds for multi-family housing with any CAAs that receive DCEO approval to deliver multi-family weatherization services. Nicor Gas will inform CAAs that braiding in multi-family buildings is allowed, work with CAAs to better understand specific barriers to serving multi-family buildings, and support or co-fund training and equipment.
- Subject to agreement by DCEO, Nicor Gas will split funding, including health and safety, 50-50 for each IHWAP building served, including funding for all efficiency measures, health and safety measures, and administrative costs, consistent with IHWAP guidelines. Nicor Gas will claim 100% of the gas savings achieved through all efficiency measure installations. Nicor Gas will negotiate with DCEO with the goal of reaching consensus on a designated level of IHWAP training contribution.

Retrofits and Healthy Home Offerings

- Nicor Gas will consult with CAAs, CBOs, and other organizations that perform weatherization services about changes to measure installation guidelines.
- Nicor Gas will consider the following criteria before installing advanced thermostats:
 - The appropriate brand and type of thermostat based on the availability of broadband wi-fi in the home as well as the age and model of their HVAC equipment.
 - Client interest after advanced thermostat functionality has been explained;
 - Whether the client is housebound, which may impact the thermostat's performance; and
 - Technical issues that would significantly increase labor costs associated with thermostat installation.
- Nicor Gas will provide the following information in English and Spanish to customers receiving advanced thermostats:
 - Verbal and written operating instructions, and
 - A phone number to call for assistance on the use of the product.
- Nicor Gas will install high-efficient furnaces, boilers, or water heaters only in cases of emergency replacement (e.g., existing system no longer functioning), to address a verified health and safety risk (e.g., cracked heat exchanger on a natural gas furnace), or where existing gas-fired heating

or water heating equipment is 18 years of age or older, which will automatically qualify for replacement under Health and Safety guidelines.

IE Funding

As described in Section 1.8, Section 8-104(e-5) requires minimum annual spending for income-eligible offerings that are proportionate to total utility revenues contributed by households earning less than 150% of the federal poverty level. For Nicor Gas this represents 12.4% of the portfolio budget, or \$7.2 million per year. Under the provision 8-104 (e-20) and in consultation with the SAG members and additional community agencies, Nicor Gas will instead spend at least \$18.14 million per year for these offerings, which represents 30% of the portfolio budget, or approximately 2.5 times the minimum requirements outlined in the Act. This spending includes at least \$14.77 million for programs providing comprehensive efficiency improvements, which include the Weatherization and PHA. Spending also includes \$3.4 million per year for the IE HA, AHNC and ESK program, which, although not providing full, comprehensive upgrades, will provide initial energy efficiency services to over 35,000 thousand households who cannot be served within the capacity constraints of the other offerings. Nicor Gas will also manage the IE portfolio to ensure that at least 30.8% of IE spending goes toward multi-family projects in the IE Weatherization program

In addition to the direct activities and spending outlined in this Chapter, Nicor Gas will incur additional spending to serve and support income-eligible customers.

- **Participation in Residential Programs:** Historically, income-eligible customers have also taken advantage of other residential offerings, especially the free offerings like Market-Rate Home Energy Assessments and Energy-Saving Kits. Nicor Gas may also include customers from income-eligible communities in the Elementary Energy Education and Home Energy Reports offerings. While Nicor Gas will only track IE spending from the direct offerings outlined in this Chapter 3, the Company expects that additional spending on IE customers will come from the residential offerings.
- **Portfolio Overhead Activities Supporting Income-Eligible Programs:** The portfolio support functions outlined in Chapters 5 and 6 provide support for the IE programs in areas like marketing, IT systems, evaluation, and innovation. The proportional share of these portfolio costs for direct IE programs represents an additional \$4.5 million per year.

As shown in Table 13, this additional spending increases total spending on IE customers across the portfolio to \$18.14 million. This represents approximately 39% of the total portfolio budget.

Table 13 IE Spending Summary

Spending Area	Annual Budget (\$Millions)	Share of Total Portfolio Budget
IE Programs		
<i>Comprehensive Programs (IHWAP, Retrofits, Healthy Homes and Public Housing)</i>	\$23.77	25.4%
<i>Affordable Housing New Construction</i>	\$0.96	1.0%
<i>IE Home Assessment</i>	\$1.56	1.7%

<i>IE ESK</i>	<i>\$1.72</i>	<i>1.8%</i>
Total IE Programs	\$28.02	30.0%
Portfolio Functions Supporting IE Programs	\$5.66	6.0%
Total Spending on IE Customers	\$33.66	36.0%

Income-Eligible Best Practice Collaboration

Nicor Gas has committed to engage in good faith discussions within the collaborative IE groups with the aim of sharing best practices such as:

- Streamlining qualification of eligible customers, including qualification via census data or other similar approaches.
- Seeking to engage more diverse businesses within the IE delivery of programs and services.
- Developing ways to reach customers whose annual incomes fall between 200% of the federal poverty level (IHWAP's eligibility cut-off) and at or below 80% AMI (target market defined in Section 8-104 of the Act).
- Developing ways to serve single-family and multi-family weatherization customers.
- Developing evaluation metrics for IE programs.
- Developing healthy home BPI standards (or similar) within IE communities.

Nicor Gas will work with other utilities, as appropriate and in relation to jointly delivered programs.

3.2 Income-Eligible Weatherization Program

Objective

The IE Weatherization program provides comprehensive no-cost weatherization and other improvements to IE customers.

Target Market

The program targets Nicor Gas residential households with income at or below 80% of area median income (AMI) as determined by the U.S. Department of Housing and Urban Development (HUD) guidelines. The program targets homeowners, renters, and owners of multi-family buildings who rent to IE households. For program delivery and tracking, Nicor Gas defines multi-family as buildings with at least of three living units. Smaller multi-family buildings are tracked along with detached single-family residences. While the program services renters, building owners must apply for program services and will be involved in the delivery process.

Nicor Gas has worked with SAG to define processes that make it easier for IE households to qualify for program services. While individual households can verify home income levels, multi-family buildings can also qualify by participating in other affordable housing or energy assistance programs, by living in census tracts with high concentrations of IE households, by charging affordable rents, or by otherwise documenting that more than half of tenants have incomes below 80% AMI.

Collaboration

The IE weatherization program will be delivered jointly or in collaboration with other program administrators including ComEd, Ameren, Peoples Gas and North Shore Gas. The program will also collaborate with federal, state, and local government agencies and community organizations.

The Healthy Home offering will also coordinate with health care providers, insurance companies, and other groups who are responsible for the enhanced health outcomes that will come from the Healthy Home protocols that are designed to improve indoor air quality (IAQ). For example, when comprehensive Healthy Home upgrades reduce heat stress, cold stress, humidity, mold, and improve overall IAQ, these home upgrades should reduce health care costs in addition to utility bills.

Offerings

The program includes three separate offerings, each of which has separate single-family and multi-family components.

IHWAP

The **IHWAP** offering coordinates with the statewide IHWAP program that offers weatherization services through federal programs administered by the U.S. Department of Energy and U.S. Department of Health and Human Services. The IHWAP offering directly supplements these IHWAP programs, providing funds to expand IHWAP's reach into more homes, and directly using the infrastructure IHWAP has developed to deliver these services through a statewide network of CAAs.

Retrofits

The **Retrofits** offering delivers services in communities to supplement local CAAs that may not have the capacity or expertise to fully serve all households through IHWAP. IHWAP limits participation to households with incomes below 200% of the federal poverty level, and Retrofits serves additional customers with incomes up to 80% AMI, which is approximately 300% of the poverty level. In some communities, CAAs are not able to take on the staffing, working capital, and other long-term commitments required to expand capacity. In other communities, CAAs do not have the technical expertise to address the unique requirements of multi-family buildings. Nicor Gas, along with ComEd and other partners, has identified additional contractors to serve these communities.

Healthy Home

The **Healthy Home** offering partners with CBOs, health care providers, insurance companies, and other groups to provide IE household with comprehensive services. Healthy Home is a comprehensive weatherization initiative that employs a distinctive approach to identify and enroll income-eligible customers with diagnosed respiratory conditions. The pilot focuses on providing free weatherization and indoor air quality measures to customers and families experiencing medically diagnosed respiratory conditions. Participant benefits include experiencing a healthier, safer, and more comfortable home with a reduced energy burden. These services make it possible for customers to better manage the cost of maintaining a household while proactively mitigating some potentially costly health risks. This offering will rely on Energy Advisors certified as Building Performance Institute (BPI) Healthy Home Evaluators. BPI Healthy Home protocols go beyond energy efficiency to identify measures that keep homes dry, clean, pest-free, safe, contaminant-free, ventilated and maintained.

Delivery Strategy

The three offerings use similar delivery strategies, with some differences that reflect the contractors involved and scopes of services. All offerings are provided free of charge, without copays from customers or building owners. All offerings use a workflow that includes assessments, direct installation, major upgrades, and quality assurance. The offerings also use a one-stop shop approach that helps customers easily navigate the range of offerings and program services.

Assessments

Assessments address all energy-saving opportunities, including improvements for natural gas and electricity savings. Assessments also provide information about water savings and other benefits that building owners receive from measure installations. Assessments are completed by Energy Advisors certified by the Buildings Performance Institute (BPI), with multi-family assessments performed by Advisors with additional certifications.

In addition to energy-saving opportunities, assessments may also identify health and safety issues that may need to be addressed before energy efficiency measures can be installed. For example, leaky roofs must be repaired to avoid water damage that impedes insulation performance. Similarly, issues like faulty wiring, dangerous materials, or other safety hazards must be addressed to ensure safe working conditions for installers. Nicor Gas has established a fund of \$4.2 million per year to address these Health and Safety measures across all the IE programs discussed in Chapter 3. These funds will be augmented by additional funds provided by IHWAP, ComEd and other program partners.

The **Healthy Home** offering will rely on Energy Advisors certified as BPI Healthy Home Evaluators. BPI Healthy Home protocols go beyond energy efficiency to identify measures that keep homes dry, clean, pest-free, safe, contaminant-free, ventilated, and maintained. Energy Advisors addressing multi-family buildings have earned additional multi-family certifications from BPI.

Direct Installations

Installation contractors directly install a range of low-cost measures like faucet aerators, showerheads, pipe insulation, door sweeps, air handler filter replacements, and advanced thermostats, as well as electric saving measures. In multi-family buildings, contractors work with building owners to coordinate schedules and gain access to individual living units. Education materials are provided to help households understand the installed measures, and the program takes additional steps to ensure that advanced thermostats are likely to save energy based on occupant preferences.

Major Upgrades

Major upgrades identified in the assessment are installed by specialized contractors with appropriate training and certifications. Program administrators—including the CAAs delivering the IHWAP offering, as well as implementation contractors delivering the Retrofits and Healthy Home offerings—establish arrangements with installation contractors that set out pricing, installation procedures, and other terms and conditions. This approach streamlines project specification, pricing, and scheduling.

Major measures may include air sealing and insulation, heating and water heating equipment upgrades, control systems and other measures appropriate to individual buildings. Major measures may also include optimizing their central plants which provide multi-family buildings with a suite of measures (tune-ups, pipe insulation, steam traps, and other services) that optimize boiler system performance. Major

measures also include required health and safety measures, as well as electric measures such as cooling systems and appliances that are funded by electric utility partners.

The three offerings differ slightly in eligibility requirements for some major measures. For example, the IHWAP offering follows federal and state guidelines for installing new heating and water heating measures, while the Retrofits offering only replaces equipment in cases of equipment failure or safety hazards. In addition, the Healthy Home offering expands health and safety measures beyond those addressed by the IHWAP or Retrofit offerings. Each offering also defines multi-family specifications that differ from those for single-family buildings.

Quality Assurance

The program maintains quality by first establishing rigorous program standards, including procedures for assessments and installations. Program staff also provide project management services that schedule and monitor program installations to ensure efficient and quality delivery. Finally, staff inspect 100% of project completions to ensure that measures are installed according to program specifications.

One-Stop Shop

The offerings will continue to use a one-stop shop approach that helps customers easily navigate the range of offerings and program services. Regardless of which utility a customer first approaches to initiate program services, Nicor Gas and ComEd will develop a set of common intake processes that steer customers to the right offerings and efficiently gather appropriate data. These intake processes will also address the utilities' Residential, Multi-family, and other relevant offerings to limit program confusion and ensure that eligible customers are served by the more generous IE offerings. Finally, the intake process will provide customers with information related to energy assistance from programs like the federal Low-Income Heating Energy Assistance Program and the Nicor Gas Percentage of Income Payment Plan.

Beyond intake, the one-stop shop approach will use a "single point of contact" strategy that assigns customers to individuals or teams for help in navigating program workflows. Contacts will help customers understand program offerings, coordinate contractor scheduling, and ensure quality control.

Customer Outreach Strategy

Given the unique delivery strategies, the education and outreach efforts will be carried out by the implementation contractors, CAAs, and CBOs in collaboration with the Nicor Gas Energy Efficiency Program's team. The program relies heavily on the partner organizations, who have already established trusted channels for reaching out to target customers and building owners.

The team may also promote this offering through targeted tactics, such as emails, bill inserts, digital advertisements, targeted social media posts and other promotional materials. Community events will also play a large role in educating customers about this offering and driving participation.

Innovation

The program will incorporate a range of new technologies that have been developed through the innovation programs described in Chapter 5. These include boiler chemical descaling, window inserts, venturi steam traps, gas heat pump technologies, and other advancements. The Retrofits and Healthy

Homes offerings were also developed through the programs' ongoing commitment to continuous improvement.

The program will also stay on top of additional technologies to include in the measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the IE Weatherization Program include:

- Air and duct sealing and attic insulation
- Basement sidewall and wall insulation
- Direct installation of high-efficiency products including showerheads, bath and kitchen aerators and door sweeps
- Direct install of advanced thermostats
- Programmable thermostat reprogramming and education
- High-efficiency water heaters and furnaces
- Central plant optimization

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 14 below. Please note the figures are rounded to thousands.

Table 14 IE Weatherization Program Targets

THERMS	
Gross Therms	3,296
Net Therms	3,296
Lifecycle Gross Therms	60,025
Lifecycle Net Therms	60,025
BUDGET	
Implementation Cost	32,267
Incentive Cost	49,496
Total	81,763
\$ / Therm	
\$ / Gross Therm	\$24.81
\$ / Net Therm	\$24.81
\$ / Lifecycle Gross Therm	\$1.36
\$ / Lifecycle Net Therm	\$1.36
COST EFFECTIVENESS	

TRC	1.37
PAC	0.30

3.3 Moderate Income Weatherization Program

Objective

The MI program provides comprehensive direct installation measures and low-cost weatherization and other improvements to MI customers.

Target Market

The program targets Nicor Gas residential households with income above 80% of area median income (AMI) and below 100% AMI, as determined by the U.S. Department of Housing and Urban Development (HUD) guidelines. The program targets homeowners, renters, and owners of multi-family buildings who rent to MI households. For program delivery and tracking, Nicor Gas defines multi-family as buildings with at least of three living units. Smaller multi-family buildings are tracked along with detached single-family residences. While the program services renters, building owners must apply for program services and will be involved in the delivery process.

Collaboration

The MI program will be delivered jointly or in collaboration with other program administrators including ComEd, Ameren, Peoples Gas and North Shore Gas. The program will also collaborate with federal, state, and local government agencies and community organizations, when able.

Offerings

The program includes one offering which has separate single-family and multi-family components.

Moderate Income

The **Moderate Income** for customers earning between 80% and 100% of Area Median Income (AMI). With an average annual budget of \$2.2 million, the program will deliver free direct-install products and increased incentives for weatherization and HVAC replacement projects, requiring only a 10% customer contribution.

Delivery Strategy

The three offerings use similar delivery strategies, with some differences that reflect the contractors involved and scopes of services. Assessments and Direct Installations are provided free of charge, while major measures may require a copay from customers or building owners. All offerings use a workflow that includes assessments, direct installation, major upgrades, and quality assurance. The offerings also use a one-stop shop approach that helps customers easily navigate the range of offerings and program services.

Assessments

Assessments address all energy-saving opportunities, including improvements for natural gas and electricity savings. Assessments also provide information about water savings and other benefits that

building owners receive from measure installations. Assessments are completed by energy advisors certified by the Buildings Performance Institute (BPI), with multi-family assessments performed by advisors with additional certifications.

In addition to energy-saving opportunities, assessments may also identify health and safety issues that may need to be addressed before energy efficiency measures can be installed. For example, leaky roofs must be repaired to avoid water damage that impedes insulation performance. Similarly, issues like faulty wiring, dangerous materials, or other safety hazards must be addressed to ensure safe working conditions for installers. A Health and Safety budget for the MI program has been created and is approximately \$151k per year.

Direct Installations

Installation contractors directly install a range of low-cost measures like faucet aerators, showerheads, pipe insulation, door sweeps, air handler filter replacements, and advanced thermostats, as well as electric saving measures. In multi-family buildings, contractors work with building owners to coordinate schedules and gain access to individual living units. Education materials are provided to help households understand the installed measures, and the program takes additional steps to ensure that advanced thermostats are likely to save energy based on occupant preferences. Direct Installation products will be free to the customer.

Major Upgrades

Major upgrades identified in the assessment are installed by specialized contractors with appropriate training and certifications.

Major measures may include air sealing and insulation, heating and water heating equipment upgrades, control systems and other measures appropriate to individual buildings. Major measures may also include optimizing their central plants which provide multi-family buildings with a suite of measures (tune-ups, pipe insulation, steam traps, and other services) that optimize boiler system performance. Major measures will include a customer copay.

Quality Assurance

The program maintains quality by first establishing rigorous program standards, including procedures for assessments and installations. Program staff also provide project management services that schedule and monitor program installations to ensure efficient and quality delivery. Finally, staff inspect a percentage of project completions to ensure that measures are installed according to program specifications.

One-Stop Shop

The offerings will continue to use a one-stop shop approach that helps customers easily navigate the range of offerings and program services. Regardless of which utility a customer first approaches to initiate program services, Nicor Gas and ComEd will develop a set of common intake processes that steer customers to the right offerings and efficiently gather appropriate data. These intake processes will also address the utilities' Residential, Multi-family, and other relevant offerings to limit program confusion and ensure that eligible customers are served by the more generous MI offerings.

Beyond intake, the one-stop shop approach will use a “single point of contact” strategy that assigns customers to individuals or teams for help in navigating program workflows. Contacts will help customers understand program offerings, coordinate contractor scheduling, and ensure quality control.

Customer Outreach Strategy

Given the unique delivery strategies, the education and outreach efforts will be carried out by the implementation contractors, CAAs, and CBOs in collaboration with the Nicor Gas Energy Efficiency Program’s team. The program relies heavily on the partner organizations, who have already established trusted channels for reaching out to target customers and building owners.

The team may also promote this offering through targeted tactics, such as emails, bill inserts, digital advertisements, targeted social media posts and other promotional materials. Community events will also play a large role in educating customers about this offering and driving participation.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the MI include:

- Direct Installation products
- Air and duct sealing and attic insulation
- Basement sidewall and wall insulation
- Direct install of high-efficient products including showerheads, bath and kitchen aerators and door sweeps
- Direct install of advanced thermostats
- Programmable thermostat reprogramming and education
- High efficiency water heaters and furnaces
- Central plant optimization

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 15 below. Please note the figures are rounded to thousands.

Table 15 Moderate Income Weatherization Program Targets (in thousands)

THERMS	
Gross Therms	225
Net Therms	180
Lifecycle Gross Therms	4,401
Lifecycle Net Therms	3,521
BUDGET	
Implementation Cost	3,559
Incentive Cost	3,041

Total	6,600
\$ / Therm	
\$ / Gross Therm	\$29.36
\$ / Net Therm	\$36.70
\$ / Lifecycle Gross Therm	\$1.50
\$ / Lifecycle Net Therm	\$1.87
COST EFFECTIVENESS	
TRC	1.18
PAC	0.23

3.4 Income Eligible Home Assessments Program

Objective

The Income Eligible Home Assessment (IE HA) program provides no-cost energy assessments to customers with free direct installation of energy-saving measures while simultaneously acting as intake for the comprehensive weatherization Retrofits offering.

Target Market

IE HA targets Nicor Gas and ComEd residential households with income at or below 80% of area median income (AMI) as determined by the U.S. Department of Housing and Urban Development (HUD) guidelines. The program targets homeowners and renters in single-family homes or multi-family buildings with up to two units. The gas-only component targets Nicor Gas customers and select municipalities serviced by municipal electric providers.

Collaboration

The assessment offerings are provided jointly with ComEd. Nicor Gas may work with Ameren Illinois and local municipal utilities and co-ops to develop similar coordinated offerings for customers not served by ComEd. Where there is not an electric partner, Nicor Gas provides gas-only offerings. No electric measures are installed during these gas-only assessments, and Nicor Gas pays full cost for joint fuel measures like thermostats and door sweeps.

Offerings

The IE HA program includes two offerings: in-person assessments and self-assessments.

In-person assessment

With home assessments, income eligible customers begin their energy efficiency customer journey by learning about offerings in the portfolio and what changes they can make in their homes. Energy Advisors directly install energy-saving products at the time of the assessment and educate on how these products help save energy and money. Energy Advisors create tailored reports for each assessment, identifying additional savings opportunities, efficiency upgrades and available rebates. Direct installation measures

include pipe insulation, showerheads, faucet aerators, door sweeps, air handler filter replacements, programmable and advanced thermostats, as well as other electric measures where the Program has a partnership with an electric utility or provider.

During the assessment the Energy Advisor is also assessing the customer's home for potential to be served through the Retrofits offering. The Energy Advisor is specifically looking at opportunities to replace aging and inefficient HVAC equipment, attic air sealing and insulation opportunities, duct sealing potential, and other opportunities to improve the health, safety and comfort of the home. Customers' homes that meet all or most of the Retrofits prioritization criteria will be provided comprehensive weatherization services and health and safety upgrades.

Delivery Strategy

The Nicor Gas Energy Efficiency Program implementation contractor identifies, trains and employs a network of regional BPI-certified Energy Advisors to perform home energy assessments, provide customer-specific energy efficiency recommendations, install energy-saving measures at the time of the assessment. Nicor Gas and the program implementer work together to train the Energy Advisors on program requirements.

This offering employs a flexible and targeted approach to improving home efficiency by directly installing high-efficient products during the assessment or mailing the products directly to the customer for self-installation. During the assessment, the Energy Advisor also identifies comprehensive energy efficiency and health and safety opportunities around the home. If the home meets all or most of the prioritization criteria, it will be selected for comprehensive weatherization services through Retrofits.

Customer will receive a home assessment report identifying qualifying building envelope improvement projects. Customers who do not meet all or most of the Retrofits prioritization criteria can still take advantage of the prescriptive Market-Rate offerings.

Customer Outreach Strategy

This program may employ a variety of education and outreach tactics to increase customer participation such as targeted emails, bill inserts, digital advertisements, promotional videos, social media, and other microtargeted approaches. In addition, other program materials may be created to educate customers about the offering and additional ways to save. These materials can be used by the outreach team as well as participating trade allies and other partners to promote the offering.

The outreach team may complement these efforts with community outreach, including events, cross-referrals from other energy assistance partners such as LIHEAP and the Nicor Gas Credit and Collections department, and community partnerships. The Marketing and Outreach Center also educates customers that call into the Energy Efficiency Program about the IE HA offering and can schedule assessments for customers during the call.

Innovation

The program will incorporate a range of new technologies that have been developed through the innovation programs. Those measures include window inserts like low-e storm windows and other measures developed through the innovation programs described in Chapter 5 as they become

commercially available. The program self-assessment offering, and process were also developed through continuous improvement efforts.

The program will also look to include other new technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the IE HA program include:

- Air handler filter replacements
- Direct install of domestic hot water and boiler pipe insulation
- Direct install of low-flow devices including showerheads, showerhead flow reducers, bath and kitchen aerators
- Direct install of advanced thermostats
- Distribution of domestic hot water setback cards
- Programmable thermostat and education
- Weatherstripping and door sweeps

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 16 below. Please note the figures are rounded to thousands.

Table 16 IE Home Assessments Program Targets

THERMS	
Gross Therms	508
Net Therms	508
Lifecycle Gross Therms	5,620
Lifecycle Net Therms	5,620
BUDGET	
Implementation Cost	3,882
Incentive Cost	1,703
Total	5,585
\$ / Therm	
\$ / Gross Therm	\$11.00
\$ / Net Therm	\$11.00
\$ / Lifecycle Gross Therm	\$0.99
\$ / Lifecycle Net Therm	\$0.99
COST EFFECTIVENESS	

TRC	1.99
PAC	0.41

3.5 Income-Eligible Energy-Saving Kits Program

Objective

The IE Energy-Saving Kit (IE ESK) program provides free energy-saving products to help IE customers begin their customer journey toward comprehensive energy efficiency improvements.

Target Market

The program targets all Nicor Gas residential customers who are at or below 80% of area median income as determined by the federal HUD guidelines.

Collaboration

The IE ESK offering may be delivered with electric utility partners. Nicor Gas also collaborates with state and local organizations to help identify customers and distribute kits.

Offerings

The program helps customers begin to immediately save energy and money with simple energy-saving measures that can be installed by the customer. These measures can be the first step on an energy efficiency journey, leading to more comprehensive upgrades provided free of charge through other IE program offerings. Since the other programs do not have the capacity or budget to serve all eligible IE customers, the IE ESK program helps customers take immediate steps to help lower their energy bills.

The IE ESK may include differentiated offerings, such as a water-saving kit with showerheads, faucet aerators, and a shower timer, as well as a weatherization kit with caulking, weatherstripping, and other air sealing measures.

Delivery Strategy

Nicor Gas will work with organizations such as IHWAP, Illinois Department of Health and Human Services, Community Action Agencies, local governments, community-based organizations, and other entities that serve income-eligible customers and communities.

Nicor Gas will work with an implementation contractor who will be responsible for providing portals for ordering kits, maintaining measure inventory, and fulfilling orders delivered directly to customers or to Nicor Gas and its partners for distribution.

Customer Outreach Strategy

This program may employ a variety of education and outreach tactics to increase participation such as targeted emails, bill inserts, and targeted social media posts. Kits are also offered to qualifying customers during the intake for LIHEAP and IHWAP programs. Community events can also play a large role in

educating customers about this offering and driving participation. In addition, the EE team will collaborate with other internal Nicor Gas departments such as the Contact Center, Credit and Collections and others to ensure that customers with billing challenges are aware of energy-saving offerings, especially free offerings.

Innovation

The weatherization kit and the shower timer in the water-saving kit were developed through ongoing continuous improvement efforts. The program will also work to identify additional measures appropriate for other kit offerings.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the IE ESK Program include:

- Low flow shower head
- Low flow faucet aerators
- Dual-spray kitchen faucet aerator
- Shower timer
- Plumbers tape
- Outlet and switch foam gasket
- Closed cell foam tape weatherstripping
- V-Seal type weatherstripping
- Self-adhesive door sweep
- Rope caulk
- Window Insulation kit

Program Targets

The program budget and savings targets are provided in Table 17 below. Please note the figures are rounded to thousands.

Table 17 IE ESK Program Targets

THERMS	
Gross Therms	2,859
Net Therms	2,859
Lifecycle Gross Therms	40,762
Lifecycle Net Therms	40,762
BUDGET	
Implementation Cost	3,037
Incentive Cost	3,863
Total	6,900
\$ / Therm	
\$ / Gross Therm	\$2.41

\$ / Net Therm	\$2.41
\$ / Lifecycle Gross Therm	\$0.17
\$ / Lifecycle Net Therm	\$0.17
COST EFFECTIVENESS	
TRC	13.77
PAC	2.36

3.6 Public Housing Authority Program

Objective

The IE Public Housing Authority (PHA) program provides broad and impactful energy efficiency opportunities to Public Housing Authorities to help the income-eligible households they serve.

Target Market

The program targets public housing authorities that provide subsidized public housing. The program focuses on multi-family facilities, which, for tracking purposes, Nicor Gas defines as buildings with three or more living units.

Collaboration

The PHA program will be delivered jointly with other program administrators including ComEd, Ameren, Peoples Gas and North Shore Gas.

Offerings

The PHA program provides a flexible approach to serve the needs of agencies responsible for managing public housing. While the program focuses on the large multi-family buildings that make up the majority of this housing stock, it will also address smaller multi-family buildings and other properties managed by these agencies.

Delivery Strategy

Program workflow includes multiple stages, including assessments, direct installation, major upgrades, and quality assurance. The program also uses a one-stop shop approach that helps customers easily navigate the range of offerings and program services.

Assessments

Assessments address all energy-saving opportunities, including improvements for natural gas and electricity savings. Assessments also provide information about water savings and other benefits that building owners receive from measure installations. Assessments are all completed by Energy Advisors certified by the Buildings Performance Institute (BPI), with multi-family assessments performed by Advisors with additional certifications.

In addition to energy-saving opportunities, assessments also identify health and safety issues that may need to be addressed before energy efficiency measures can be installed. For example, leaky roofs must be repaired to avoid water damage that impedes insulation performance. Similarly, issues with faulty wiring, dangerous materials, or other safety hazards, must be addressed to ensure safe working conditions for installers. Nicor Gas has established a fund of \$4.2 million per year to fund Health and Safety measures across all the IE programs discussed in Chapter 3. These funds will be augmented by additional funds provided by ComEd and other program partners.

Direct Installations

Installation contractors may directly install a range of low-cost measures including faucet aerators, showerheads, pipe insulation, door sweeps, and advanced thermostats, as well as lighting and additional measures saving electricity. Contractors work with building owners to coordinate schedules and gain access to individual living units. Materials are provided to help residents understand the installed measures, and the program takes additional steps to ensure that advanced thermostats are likely to save energy based on occupant preferences.

Major Upgrades

Major upgrades identified in the assessment are installed by specialized contractors with appropriate training and certifications. Some major measures are provided free of charge, although major equipment upgrades require some copay from building owners.

Major measures include:

- Air sealing and insulation, A/C covers and gap fillers, heating and water heating equipment upgrades, control systems and other measures appropriate to individual buildings
- Furnace tune-ups and central plant optimization that provides multi-family buildings with a suite of measures (tune-ups, pipe insulation, steam traps, and other services) that optimize boiler system performance
- Required health and safety measures, as well as cooling systems, appliances, and other major electric measures funded by electric utility partners

Quality Assurance

The program maintains quality by first establishing rigorous program standards, including procedures for assessments and installations. Program staff also provide project management services that schedule and monitor program installations to ensure efficient and quality delivery. Finally, staff inspect project completions to ensure that measures are installed according to program specifications.

Customer Outreach Strategy

Given the unique delivery strategies, marketing efforts will be carried out by the implementation contractors, partner low-income agencies in collaboration with the Nicor Gas Energy Efficiency Program team. The Nicor Gas Energy Efficiency Program team may promote this offering through targeted communications with agencies responsible for managing PHA properties.

Innovation

The program will stay on top of the latest in technologies, such as commercial secondary windows, gas heat pump technologies, drain water heat recovery, and other innovations. The program will look to include these technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the IE PHA Program include:

- Air and duct sealing and attic insulation
- Basement sidewall and wall insulation
- Direct install of low flow devices including showerheads, bath and kitchen aerators
- Direct install of smart thermostats
- Programmable thermostat reprogramming and education
- High efficiency water heaters and furnaces
- Furnace tune-ups and central plant optimization
- A/C covers and gap filler

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 18 below. Please note the figures are rounded to thousands.

Table 18 PHA Program Targets

THERMS	
Gross Therms	112
Net Therms	112
Lifecycle Gross Therms	1,628
Lifecycle Net Therms	1,628
BUDGET	
Implementation Cost	1,941
Incentive Cost	1,485
Total	3,426
\$ / Therm	
\$ / Gross Therm	\$30.68
\$ / Net Therm	\$30.68
\$ / Lifecycle Gross Therm	\$2.11
\$ / Lifecycle Net Therm	\$2.11
COST EFFECTIVENESS	
TRC	0.85
PAC	0.19

3.7 Affordable Housing New Construction Program

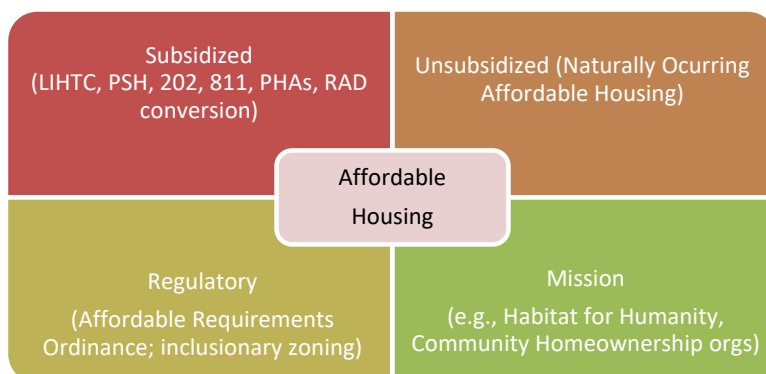
Objective

The objective of the Affordable Housing New Construction (AHNC) program is to provide technical guidance and financial incentives for developers of affordable housing to improve comfort and reduce energy use for IE households, while exceeding current Illinois building code requirements.

Target Market

The program targets developers of affordable housing projects. The program focuses on multi-family new construction, which, for tracking purposes, Nicor Gas defines as buildings with three or more living units. However, the program may also address single-family housing. Projects must include units that will be affordable for IE residents earning at or below 80% of the area median income (AMI) as defined by federal HUD guidelines. As shown in Figure 5 the target market covers subsidized affordable housing, affordable housing built for regulatory compliance (inclusionary zoning), mission-driven affordable housing, and naturally occurring affordable housing.

Figure 5 Affordable Housing Market Segmentation



Collaboration

The AHNC program will be delivered in coordination with other program administrators including electric utilities.

Offerings

The AHNC offering provides incentives and technical assistance for the developers and builders of new and renovated buildings that eventually will be occupied by IE customers. The program requires measures covering natural gas systems, including building envelope, HVAC systems, and water-heating equipment, as well as electric systems such as lighting, HVAC systems and appliances, which are covered by electric utility partners. Design and construction of all living spaces within participating buildings must meet or exceed the Multi-Family Standard. The standard includes an integrated bundle of energy cost-reduction measures (ECMs) designed to deliver significant energy savings over the current Illinois Energy Conservation Code baseline.

Delivery Strategy

The Nicor Gas Energy Efficiency Program will rely on an implementation contractor to promote and implement the AHNC program. The contractor will work with developers, architectural and design firms, and builders of affordable housing to promote the availability and value of the program. The program contractor will provide technical assistance to help design teams identify potential energy efficiency strategies, and then model those strategies to help teams understand potential energy savings, cost savings, building performance improvements, and other sustainability benefits. The program will provide incentives that improve the financial performance of the energy efficiency investments and provide project management services to help participants navigate the program workflow process.

Customer Outreach Strategy

The implementer is responsible for this program's education and outreach initiatives. The Nicor Gas Energy Efficiency Program team may provide support as needed.

Active project outreach for AHNC follows several channels. It leverages relationships with past program participants and with local agencies such as the Illinois Housing Development Authority (IHDA), Chicago

Housing Authority (CHA) and other public housing authorities (PHAs), Chicago Department of Planning and Development (DPD) and industry associations such as Illinois Housing Council (IHC), Chicago Rehab Network, and community development corporations to identify projects that are good candidates for AHNC. Implementation staff also identify project leads through extensive engagement in the Northern Illinois affordable housing design and development community, or by monitoring industry publications and subscription services such as *Construction Wire*, *Curbed Chicago*, and *Crain's Real Estate Daily*. Implementation outreach staff may conduct face-to-face meetings and lunch-and-learns with design firms, developers, funders, other project team members, or any of the entities noted above. Implementation outreach staff may attend industry events in order to identify project contacts, better understand the market, and network with potential participants. The implementation team may present, host a booth or sponsor key events.

The outreach goal is to identify projects and influencers with sufficient lead time to ensure design meets the requirements of the Multi-Family Standard. Messaging and collateral emphasize the value of the offering to the project and its residents, and the importance of sustainability and financial leverage in winning highly competitive funding solicitations. Figure 6 demonstrates the priority targets for AHNC outreach and marketing, proceeding out from decision-making authority to various types of influence on project design and finance.

Figure 6 Priority targets for AHNC outreach and marketing



Encouraging repeat participation is a key strategy for filling the AHNC project pipeline with high quality projects. Many developers and design teams are repeat participants in the program, who then provide personal testimonials and referrals to other parties. AHNC has supported successful projects in recent years; this track record, combined with consistent outreach and engagement, has enhanced the

industry's confidence and credibility in the AHNC offering. The implementation outreach team regularly follows up with past participants to learn about project pipeline and encourage teams to (re)apply.

Innovation

The program will stay on top of the latest in new construction practices and technologies, such as thin triple paned windows, gas heat pump technologies, hybrid designs, on-site renewables, microgrids, community designs, and other innovations. The program will look to include these technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in AHNC include:

- High-Performance Windows
- Reduced Infiltration
- Reduced Thermal Bridging
- High-Performance HVAC Equipment
- High-Performance Fans
- Efficient Ventilation
- Advanced HVAC Controls
- High-Performance Interior Lighting
- Interior Lighting Controls
- High-Performance Exterior Lighting
- High-Performance Water Heating Equipment
- Hot Water Conservation
- Efficient Appliances

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 19 below. Please note the figures are rounded to thousands.

Table 19 AHNC Program Targets

THERMS	
Gross Therms	190
Net Therms	190
Lifecycle Gross Therms	3,922
Lifecycle Net Therms	3,922
BUDGET	
Implementation Cost	2,305
Incentive Cost	1,331
Total	3,636

\$ / Therm	
\$ / Gross Therm	\$19.10
\$ / Net Therm	\$19.10
\$ / Lifecycle Gross Therm	\$0.93
\$ / Lifecycle Net Therm	\$0.93
COST EFFECTIVENESS	
TRC	1.86
PAC	0.38

4 Commercial Programs

4.1 Commercial Program Overview

This chapter describes the Nicor Gas Energy Efficiency Program's proposed portfolio for commercial energy efficiency offerings, which target commercial, small business, industrial and public sector segments. The commercial portfolio includes rebates, assessments, custom incentives, strategic energy management and new construction offerings. As emerging technologies are vetted, they may be incorporated as new measures in the portfolio. Nicor Gas will look to partner with commercial customers for pilot locations to test and research new technology, including gas heat pump technology, for example.

Public sector customers can take advantage of the same measures and services as the other commercial customers. The Program will utilize unique strategies to educate and engage public sector customers. This may include targeted messaging on bill inserts, digital ads and other mediums to show how public sector customers can participate. The minimum spending targets are determined according to Section 8-104 guidelines when filing a plan under the provisions of subsection (e-20). A minimum of 30% of Nicor Gas Energy Efficiency Business Program Budget must be allocated to public sector measures and offerings. As described in Section 1.9 the minimum public spending target is \$6.64 million per year for 2027 to 2029.

4.2 Business Energy Efficiency Rebates Program

Objective

The Business Energy Efficiency Rebates (BEER) program's goal is to produce natural gas savings in the commercial, public, and industrial sectors by encouraging customers to make energy-saving improvements and offering incentives for qualifying upgrades. This offering also provides free energy assessments to identify energy-saving opportunities, install free energy-saving products on-site, and provide a customized report of efficiency recommendations.

Target Market

The target market for this program is commercial, industrial, and public sector customers that are either using 60,000 therms or more per year or are part of a corporate-owned enterprise with more than 10 locations. Customers using less than 60,000 therms per year are served through our Small Business offering (Section 4.5). Program managers also have the discretion to adapt program eligibility to ensure that customers receive assessments and other services that meet their business needs.

Collaboration

The program will be primarily delivered by Nicor Gas, with collaboration from the other Illinois utilities when appropriate. The commercial food service midstream offering will be managed jointly with the four other Illinois investor-owned utilities.

Offerings

The four BEER offerings include assessments, rebates, commercial food service (CFS), and business optimization (BOP).

Nicor Gas provides free energy assessments that introduce customers to energy efficiency, provide technical assistance and identify efficiency opportunities. Energy Advisors provide tailored customer-facing reports that summarize assessment findings and make recommendations for energy-saving projects. Where customers are interested, assessments will address GHG reductions or other customer sustainability goals in addition to natural gas savings. During the assessment, Energy Advisors can also install free energy-saving products such as showerheads, faucet aerators, laminar flow aerators, salon sprayers, weatherstripping, and indoor pipe insulation.

Business rebates include six categories of measures:

- Space and water heating rebates include furnaces, boilers (condensing and non-condensing), infrared heaters, condensing unit heaters, direct fire space heaters, ENERGY STAR® storage water heaters and programmable thermostats.
- Steam trap rebates include commercial, dry cleaner and industrial/process steam traps.
- Key efficiency improvement rebates include boiler reset controls, pipe insulation, pool/spa cover, ozone laundry, clothes dryer modulation controls, demand-controlled ventilation, compressed air heat recovery, tank insulation, and green door hinges.
- Boiler tune-ups are available every 2 years for process and 3 years for space heating boilers.
- Commercial food service rebates include ovens, fryers, griddles, pasta cookers, steamers broilers, and pre-rinse spray valves.
- Agriculture rebates include dairy water heaters, grain dryer tune-ups, greenhouse boiler tune-ups, greenhouse linkageless boiler controls, greenhouse boiler O2 trim controls, greenhouse infrared film and greenhouse heat curtains.

Nicor Gas also has a midstream route to deliver commercial food service rebates directly to equipment distributors. By providing these “midstream” rebates, instead of the more typical “downstream” rebates for individual end users, Nicor Gas increases market influence and market reach. Nicor Gas leverages the relatively limited number of distributors in Northern Illinois to promote measures and pass along rebates to all customers purchasing equipment. CFS equipment includes conveyor ovens, infrared rotisserie ovens, rack ovens, infrared charbroilers, infrared salamander broilers, infrared upright broilers, bottom-finned stock pots, pasta cookers and pre-rinse spray valves. There are also rebates for ENERGY STAR® certified equipment, including combination ovens, convection ovens, commercial steamers, fryers, and griddles.

Business Optimization (BOP)

The BOP offering provides a low-cost suite of measures that optimize boiler system performance. The low-cost offering targets customers who may not be financially able to implement other more expensive measures or may not have energy efficiency as a current strategy. The offering targets commercial and public sector customers, with a special focus on businesses located in income-eligible communities. The measures include, but are not limited to, pipe insulation, steam traps, steam trap surveys and boiler tune-ups.

Delivery Strategy

Prescriptive measures are marketed to customers through a combination of market push and pull strategies as well as trade ally engagement. These efforts stimulate demand, while simultaneously increasing market provider investment in stocking and promoting high-efficiency products.

The overall delivery strategy consists of:

- Reaching and educating business customers with focused marketing and implementation tactics
- A simple-to-follow and streamlined process to performing energy assessments and equipment upgrades, retrofits and tune-ups which are designed to target known market barriers
- Project facilitation supported by an experienced, knowledgeable, and motivated team of trade allies and engineers to ensure recommended energy efficiency projects are completed and installed correctly
- Knowledgeable and accessible customer support and outreach staff capable of directly addressing customer and trade ally inquiries, while escalating and directing other inquiries as necessary

Customer Outreach Strategy

The driving force behind the BEER offering is a combination of direct outreach to customers, trade allies (installing contractors, distributors, manufacturers, etc.) and other partners (municipalities, park districts, community organizations, etc.) to increase program engagement.

Trade ally participation is key to achieving our program goals. The Implementation Contractor and Nicor Gas trade ally outreach teams support trade allies by:

- Educating trade allies about the offerings and providing program support via calls, emails, in-person meetings, webinars, training events and/or virtual meetings
- Providing tools and resources to help the trade ally provide a great customer experience
- Supporting/attending trade ally events, trainings, conferences and other industry events
- Hosting roundtable meetings which are used to share program information and solicit feedback from the participating contractors
- Recruiting non-Contractor Circle members to encourage them to join the network

The offering will also use targeted communications tactics (emails, mail and direct outreach) to motivate business customers, facility owners and property managers. Targeting will take into consideration customers with GHG reduction or other sustainability goals.

Nicor Gas will also explore opportunities to engage customers who use commercial kitchen equipment in their business (e.g. restaurants and institutional kitchens), as well as the trade allies and professional organizations that work with these types of customers.

Innovation

The program may incorporate measures developed through the innovation programs described in Chapter 5, as well as new delivery strategies developed through continuous improvement activities.

The program will also stay on top of the latest commercial and industrial technologies, such as gas heat pump technologies, ventilation air deflectors, hybrid designs, on-site renewables, and other innovations. The program will look to include these technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the BEER program include:

- Steam traps, including Venturi steam traps
- Pipe and tank insulation
- High efficiency HVAC and water heating equipment
- Air compressor heat recovery
- Commercial kitchen equipment
- HVAC and mechanical tune ups
- Controls such as demand-controlled ventilation, hot water circulation, thermostats
- Commercial dryer controls and Ozone laundry
- Agriculture measures

Program Targets

The program budget and savings targets are provided in Table 20 below. Please note the figures are rounded to thousands.

Table 20 BEER Program Targets

THERMS	
Gross Therms	18,322
Net Therms	15,999
Lifecycle Gross Therms	133,343
Lifecycle Net Therms	116,196
BUDGET	
Implementation Cost	11,759
Incentive Cost	1,375
Total	23,134
\$ / Therm	
\$ / Gross Therm	\$1.26
\$ / Net Therm	\$1.45
\$ / Lifecycle Gross Therm	\$0.17
\$ / Lifecycle Net Therm	\$0.20
COST EFFECTIVENESS	
TRC	10.57
PAC	2.69

4.3 Custom Incentives Program

Objective

The purpose of the Custom Incentives (Custom) program is to assist medium to large commercial, industrial and public sector customers in identifying and implementing cost-effective gas-saving measures that are not otherwise addressed in Nicor Gas' BEER or Small Business offerings. Custom projects may include, but are not limited to, Combined Heat and Power (CHP) systems, process heat recovery technologies, other low-emissions technologies such as gas heat pumps, and more. Additionally, the Custom program offers retro-commissioning (RCx), which aims to optimize operations and improve building efficiency by returning facilities to their intended operation or design specifications.

Target Market

The target market for this program is commercial, industrial, and public sector customers that are either using 60,000 therms or more per year, or the customers who belong to a corporate-owned enterprise with 10 or more locations. Program managers also have the discretion to adapt program eligibility to ensure that customers receive assessments and other services that meet their business needs.

Collaboration

The program will be delivered by Nicor Gas in coordination with ComEd and Ameren (RCx and CHP).

Offerings

There are several offerings within the Custom program:

Assessments

Nicor Gas provides custom assessments and engineering studies that help customers understand their energy efficiency opportunities by quantifying the estimated project costs, potential energy savings and forecasted incentives. Technical assistance is provided to customers or their contractors to help quantify the energy-saving opportunity and the customized incentives for specific projects.

Incentives

The Custom program also provides cash incentives and technical assistance to help customers identify and implement energy efficiency retrofit opportunities that are not covered by other business energy efficiency offerings. These projects involve unique or process-related equipment or multiple measures with interactive effects that do not qualify under the prescriptive program. Performance-based incentives are provided to customers working on larger-scale projects. Custom incentives are typically higher than prescriptive rebates and are based on energy savings or engineering analysis.

Retro-commissioning (RCx)

The RCx offering helps customers identify and implement low- and no-cost measures to improve efficiency of existing buildings. Services are delivered through a closed network of RCx trade ally service providers that have been trained in program protocols and processes. For smaller facilities, RCx providers conduct a targeted assessment of areas with substantial energy-saving opportunities, such as packaged HVAC units. Larger facilities are eligible to receive a more comprehensive assessment of building systems and controls. This program includes a strong customer education component to promote the value of retro-commissioning, targeting senior management and decision-makers as well as facility

operations and maintenance staff. Such education is provided through program outreach, assessment activities and the trade ally, and is also supported through market conditioning efforts.

Combined Heat and Power (CHP)

Combined Heat and Power (CHP) is an innovative and efficient way to generate power and thermal energy from a single energy source. CHP systems provide at least a portion of a facility's electricity and capture waste heat from hot exhaust gases for use in space heating, cooling, domestic hot water heating, dehumidification and/or process heating.

The installation of these energy-saving technologies may be eligible for Nicor Gas engineering support and incentives in the CHP program administered by the University of Illinois at Chicago's Energy Resources Center, who will assess the eligibility of customers to participate in the CHP program. Qualified customers can receive a CHP Feasibility Study conducted by the Energy Resources Center that evaluates the technical and economic viability of multiple CHP scenarios.

Nicor Gas and ComEd perform an interconnection analysis and Nicor Gas will work with customers to determine peak gas pressure and flow demand, infrastructure needed and the customer cost, if any.

Delivery Strategy

The program will be primarily delivered by a program implementation contractor (IC).

Energy efficiency assessments or engineering studies may be performed in-person or virtually by the IC or third-party engineering consultants. These studies will be subject to Nicor Gas pre-approval and quality review to ensure the accuracy of savings and incentives calculations. Where customers are interested, assessments may address GHG reductions or other customer sustainability goals in addition to natural gas savings. Nicor Gas may also partner with electric utilities to coordinate efforts and provide more comprehensive (both gas and electric) assessments of efficiency opportunities and reduce the overall study costs.

Custom projects require:

- Collection of facility data
- Pre-approval application (must be submitted for review prior to equipment purchase/installation)
- Site inspection (in some cases, there will be an on-site inspection of existing equipment)
- Pre-approval acknowledgement by program implementer (customer can proceed with equipment purchase/installation)
- Installation confirmation and final approval application (invoices, cost documents, measures installed, etc.)
- Final approval acknowledgement by program implementer (calculation of therm savings, final incentive payments)

For the RCx offering, the IC will oversee activities conducted by participating RCx providers, review studies, provide independent evaluation of savings estimates and provide post-installation verification.

Key elements of RCx implementation include:

- Recruitment and pre-screening: The implementer recruit customers and pre-screen applications to determine if the project qualifies under the program criteria.
- Initial project assessment: The implementation contractor and selected RCx service provider meet with the customer to determine if enough potential savings exist to merit participation.
- Formal agreement: In this agreement, the customer commits to spend a certain amount to implement a bundle of measures, such that the complete project has a pre-specified payback, and the project must be completed in a pre-specified time limit.
- RCx study: The RCx provider will conduct an in-depth analysis of the measures selected by the customer to generate the diagnostic and calculation report.
- Implementation: The customer implements the measures according to the report. Nicor Gas does not provide an incentive to assist with implementation costs.
- Measurement and Verification (M&V): The IC or an evaluation contractor will return to the project site to verify savings. If measures are not implemented in accordance with the agreement, the customer will be responsible for repayment of all study costs and incentives received.

Finally, the Custom program will offer incentives for related projects installing equipment such as CHP systems.

Customer Outreach Strategy

Similar to the BEER program, the driving force behind the Custom offering is a combination of direct marketing to customers and effective outreach to partners such as trade allies, distributors, manufacturer, local community groups, associations and trade associations.

Nicor Gas' internal staff, as well as the IC, will look to drive more participation to this program through outreach activities to pre-screened customers. Screening will take into consideration customers with GHG reduction or other sustainability goals. The IC will also conduct outreach to key market influencers, such as trade allies, trade associations, energy service companies (ESCOs), engineering firms and architects. Outreach may be in the form of meetings, webinars, calls/email, training seminars, trade shows, events or educational strategies. Nicor Gas expects that some participation will come from cross referrals from other programs such as the standard rebate offering.

Trade Ally (installing contractors, distributors and manufacturers) participation will also be key to achieving our program goals. The IC and the Nicor Gas trade ally outreach teams support trade allies by:

- Educating trade allies about the offerings and providing program support via calls, email, in-person meetings, webinars, training events and/or virtual meetings
- Providing tools and resources to help trade ally provide great customer experience
- Supporting/attending trade ally events, training, conference, and other industry events
- Hosting roundtable meetings which are used to share program information and solicit feedback from the participating contractors
- Recruiting non-Contractor Circle members to encourage them to join the network

We will also use targeted communications tactics (emails, mail and direct outreach) to motivate business customers, facility owners, and property managers to take part in the program.

Innovation

The program may also incorporate measures developed through the innovation programs described in Chapter 5, as well as new delivery strategies developed through continuous improvement activities. The program will also stay on top of the latest technologies and look to include these technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the Custom program include:

- Customized projects
- Retro-commissioning and process heating projects
- Combined Heat and Power (CHP)
- Gas heat pumps
- Assessments

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 21 below. Please note the figures are rounded to thousands.

Table 21 Custom Program Targets

THERMS	
Gross Therms	12,761
Net Therms	8,639
Lifecycle Gross Therms	200,690
Lifecycle Net Therms	132,074
BUDGET	
Implementation Cost	8,828
Incentive Cost	25,204
Total	34,032
\$ / Therm	
\$ / Gross Therm	\$2.67
\$ / Net Therm	\$3.94
\$ / Lifecycle Gross Therm	\$0.17
\$ / Lifecycle Net Therm	\$0.26
COST EFFECTIVENESS	

TRC	5.41
PAC	2.22

4.4 Strategic Energy Management Program

Objective

The objective of the Strategic Energy Management (SEM) program is to obtain energy savings by focusing on improving and optimizing commercial, industrial and public sector processes and energy equipment. Cohorts are grouped according to building type, including, K-12 schools, universities, hospitals, large businesses and more.

Target Market

The target market is medium to large commercial, industrial and public sector customers. There is also the potential for SEM to be expanded to the large multi-family and community sectors, both private and public.

Collaboration

It is the intent of Nicor Gas to offer this program jointly or in collaboration with other regional electric and municipal utilities.

Offerings

The SEM offering has primarily been a coordinated program with ComEd, and there is potential for coordinated programs that include Peoples Gas and North Shore Gas (with ComEd and Nicor Gas) and/or Ameren Illinois (with Nicor Gas). The offering is typically delivered in small cohorts (10-12) of customers of similar size who use a significant quantity of natural gas and electricity annually. The cohort members work together with the program staff for one year and jointly determine operational, process and equipment efficiency opportunities in their respective facilities. The participating customer group includes an executive or leader of the organization. Each cohort customer group nominates an internal energy champion who acts as the site project manager and is responsible for driving operational and process efficiencies in his or her facility. This champion partakes in the program training and is responsible educating and sharing this information with others in their respective organizations.

SEM provides a high level of customer support, including coaching, engineering, and energy modeling. SEM aims to generate process and behavior savings at customer facilities by focusing on waste reduction, process improvement, and lean principle applications toward energy usage. Organizational and behavior changes are promoted within program design, which includes workshops, webinars, resources and tools, one-on-one coaching, and support on building the organization's own energy practices. The SEM services are provided at no cost to the participating customers. SEM assists participating customers with integrating energy efficiency disciplines into their business and explains the cost of energy in their products and services as part of their business operations. The offering also drives more customer participation in the prescriptive rebate and custom incentive programs as they implement additional energy-saving measures.

Delivery Strategy

Nicor Gas and ComEd work with the implementation contractor (IC) to identify and recruit 10 to 12 customers into a cohort. The IC, Nicor Gas and partner utilities meet with the customer's staff to present program benefits and expectations. The customer will have the opportunity to express what they see as advantages or challenges of participation. Program materials are used to assist with the decision-making process, including an Executive Sponsor Roadmap, which outlines specific activities and the time commitment involved in the SEM program. The value of SEM begins with identifying energy cost-reduction opportunities, then linking the recommendations to other (often more important) business objectives, such as equipment reliability, reduced maintenance costs, sustainability, GHG reduction, and employee productivity and comfort.

The first year is the most intensive, consisting of workshops/activities as well as establishing energy models. The SEM program engages the participants' designated energy champion, executive sponsor, and energy team members in meetings and peer-to-peer training sessions that will typically occur on a monthly basis during the first SEM program year and on a quarterly basis during the optional subsequent years of SEM. Participants agree to send at least two staff to each session, and to actively participate in these sessions, including presenting on relevant topics or progress.

The SEM coach conducts the workshops, manages model development and program coordination, and interfaces with participants at all on-site events and group workshops. The SEM energy manager's function, with guidance from the SEM coach, will be to assist and supplement the site energy champion and team in front-end research and scoping, service provider identification and vetting, bid evaluation, data collection, cost benefit analysis, project write-up and funding request, project management and tracking, and project close out.

The IC tracks energy savings by creating baseline statistical energy models and regularly updating each model throughout the engagement. The IC's internal model development process ensures creation of the best-fitting and most user-friendly energy model. The model development process includes data discussion, collection, alignment and normalization, prototype modeling, including analysis of missing or anomalous data, variable distribution, time series charts, outlying data points, scatterplots, and correlation between variables. Final modeling includes the analysis of autocorrelation, regression outliers, residual values and distributions, and model limitations.

After the measurement period concludes, the IC prepares a final report for each participant. The final report includes an overview about the participant's involvement in the SEM process, feedback from the participant, documentation of completed energy-saving activities (including GHG reduction and other sustainability objectives), as well as a summary of statistical basis and rational for the baseline model savings and calculations.

After the first year, participants can continue their energy-saving journey by establishing additional SEM processes, working on projects and tracking savings using the energy models created in year one by joining the Alumni cohort. The Alumni program includes maintaining energy models and compiling savings reports, conducting regular workshops and specific topic of interest interactive webinars, regular remote check-in meetings and an annual needs assessment for each participant. Depending upon individual needs, one-on-one SEM coaching will be available to orient new energy champions, executive sponsors and team members. One-on-one energy manager support will also be available for this cohort.

Customer Outreach Strategy

Given that this offering targets Nicor Gas' larger therm users, most of the customer participation will be accomplished through existing relationships developed by Nicor Gas' account management and Nicor Gas Energy Efficiency Program outreach teams. The program will be targeted to business and public sector customers, including facility owners and property managers. Targeting may take into consideration customers with GHG reduction or other sustainability goals.

The team will play a role in reviewing the IC-developed collateral and aiding in other education and outreach needs such as events.

Innovation

The program may incorporate measures developed through the innovation programs described in Chapter 5, as well as new delivery strategies developed through continuous improvement activities. The program will also stay on top of the latest technologies and methods for long-term energy savings.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the SEM Program include:

- Low-cost/no-cost behavior savings
- Identification of potential Prescriptive and Custom projects and savings, which if not claimed by these programs, will be claimed as SEM savings

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 22 below. Please note the figures are rounded to thousands.

Table 22 SEM Program Targets

THERMS	
Gross Therms	4,556
Net Therms	4,556
Lifecycle Gross Therms	31,892
Lifecycle Net Therms	31,892
BUDGET	
Implementation Cost	2,105
Incentive Cost	3,872
Total	5,977
\$ / Therm	
\$ / Gross Therm	\$1.31
\$ / Net Therm	\$1.31
\$ / Lifecycle Gross Therm	\$0.19
\$ / Lifecycle Net Therm	\$0.19
COST EFFECTIVENESS	
TRC	11.25
PAC	2.62

4.5 Small Business Program

Objective

The Small Business (SB) program obtains long-term natural gas savings for small business and public sector gas customers by providing financial incentives, information, and direct installation of energy-saving products to overcome key market barriers.

Target Market

The target market for this program is Nicor Gas commercial and public sector customers using up to 60,000 therms of gas annually. While any small business customer can receive program services, the program targets customers with substantial heating and water heating loads, including dry cleaners and other customers with boiler systems. Program managers also have the discretion to adapt program eligibility to ensure that customers receive assessments and other services that meet their business needs. (For example, some customers with relatively low gas usage may be best served by the assessment provided under the BEER and Custom programs.)

Collaboration

The program will be delivered as a coordinated approach with ComEd.

Offerings

This program will provide small commercial and public sector gas customers with two primary options to participate: rebates for installing energy-efficient improvements and assessments that provide energy education along with installation of free energy-saving products.

Rebates incentivize customers to install energy-efficient equipment or make energy-saving improvements. Small business rebates include five categories:

- Space and water heating rebates include furnaces, boilers (condensing and non-condensing), Infrared heaters, condensing unit heaters, direct fire space heaters, ENERGY STAR® storage water heaters, and programmable thermostats.
- Steam trap rebates include commercial, dry cleaner and industrial/process steam traps.
- Key efficiency improvement rebates include measures such as boiler reset controls, pipe insulation, pool/spa cover, ozone laundry, clothes dryer modulation controls, demand-controlled ventilation, heat recovery, tank insulation, and green garage hinges.
- Boiler tune-ups for space heating and process boilers.
- Commercial food service equipment is also available to small business customers within the midstream CFS offering described as part of the BEER program in Section 4.2.
- Small business energy-saving kits delivered direct-to-customer.

The second option is the free energy assessment, which introduces customers to energy efficiency, provides technical assistance, identifies energy-saving opportunities, and prioritizes energy efficient improvements. Customers are given a customized energy report that aligns with the rebates available for small business customers. Small business customers may also qualify for custom incentives for large energy-saving projects. These assessments are offered in-person or virtually.

During the assessment, energy advisors may install free energy-efficient products that result in immediate energy savings. Measures may include high-efficiency bathroom and kitchen aerators, showerheads, pre-rinse spray valves, salon sprayers, laminar flow aerators, weatherstripping and pipe insulation. In a virtual assessment, these measures may be delivered to the customer for self-installation.

The assessment and installation of energy-efficient products are implemented with the following objectives:

- Introduce small business customers to Nicor Gas Energy Efficiency offerings
- Educate small business customers about the benefits of energy efficiency
- Help customers take the next steps on their energy efficiency journey by providing leave-behind materials including the assessment report
- Produce long-term energy savings by incentivizing customers to do the recommended work
- Deliver immediate gas and energy savings for the small business sector through direct installation of energy-saving low-cost measures

Unlike large commercial businesses that may have access to greater technical and financial resources, the small business sector has limited access to specialized resources to help them undertake energy efficiency projects. Small businesses generally benefit from the assessment and direct install turn-key

approach, where a single contractor conducts an audit to identify and install appropriate gas measures. Small business customers will also be eligible to finance program measures through the Nicor Gas On-Bill Financing program.

In coordination with the Market Development Initiative (MDI) described in Section 6.7, Nicor Gas will test new program strategies aimed at weatherizing small businesses in disadvantaged communities as well as targeting programs to restaurants and other businesses impacted by the Covid-19 pandemic. While the main program delivery costs for these strategies will be covered within MDI, incentive costs and savings associated with installed measures will be tracked as part of the small business or other appropriate program.

Delivery Strategy

SB will be primarily delivered by a program implementation vendor. The vendor will contract with individual installation vendors and regional trade allies to conduct outreach to customers and provide turn-key installations. The overall delivery strategy includes:

- Reaching and educating the small business customers through focused marketing and implementation tactics
- A simple-to-follow and streamlined process to performing energy assessments and equipment upgrades, retrofits, and tune-ups, designed to target known small business market barriers
- Project facilitation supported by an experienced, knowledgeable, and motivated team of trade allies and engineers to ensure recommended energy efficiency projects are completed and installed correctly
- Knowledgeable and accessible customer support and marketing staff capable of directly addressing customer and trade ally inquiries, while escalating and directing other inquiries as necessary
- Cost-effective quality assurance and verification activities to ensure installed savings are realized

Customer Outreach Strategy

Several communication strategies will be employed to drive participation. Efforts include targeted marketing by mail and email, and outreach to key influencers such as Chambers of Commerce and neighborhood and regional trade associations. Additionally, outreach efforts are aimed at targeted economic development organizations, events, and follow up on referrals by Nicor Gas' internal staff. Trade allies, distributors, manufacturers, and other industry stakeholders will be educated about the program's purpose, requirements, and incentives so they can help promote and support our efforts.

Innovation

The program incorporates measures developed through the innovation programs described in Chapter 5, as well as new delivery strategies developed through continuous improvement activities. New technologies include venturi steam traps, green door hinges, boiler water descaling, and radiator replacements. New delivery approaches include virtual assessments.

The program will also stay on top of the latest technologies for small businesses, such as gas heat pump technologies, ventilation air deflectors, and other innovations. The program will look to include these

technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the SB program include:

- Steam traps
- Commercial water heating equipment
- Customized projects
- High efficiency HVAC equipment and tune ups
- Pipe and tank insulation
- Controls such as DCV, hot water circulation, thermostats
- Commercial dryer controls and ozone laundry
- Air compressor heat recovery
- Small business energy-saving kits

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 23 below. Please note the figures are rounded to thousands.

Table 23 SB Program Targets

THERMS	
Gross Therms	6,846
Net Therms	6,573
Lifecycle Gross Therms	51,311
Lifecycle Net Therms	49,272
BUDGET	
Implementation Cost	6,625
Incentive Cost	6,596
Total	13,221
\$ / Therm	
\$ / Gross Therm	\$1.93
\$ / Net Therm	\$2.01
\$ / Lifecycle Gross Therm	\$0.26
\$ / Lifecycle Net Therm	\$0.27
COST EFFECTIVENESS	
TRC	6.81
PAC	1.91

4.6 Commercial and Industrial New Construction Program

Objective

The objective of the Commercial and Industrial New Construction (CINC) program is to obtain energy savings during the design and construction of new buildings, major renovations of existing buildings, and tenant buildouts in the commercial, industrial, large multi-family (five units or more), and public sector markets. Through collaboration with other Illinois utilities, this comprehensive regional new construction program captures both gas and electric savings for commercial, industrial, large multi-family and public sector projects.

Target Market

The target market for CINC includes builders, developers, designers, engineering, and architecture firms involved in the construction of new commercial, industrial, large multi-family and public sector buildings. The program will target new construction projects, as well as major renovation projects, in the early phase of design.

Collaboration

It is the intent of Nicor Gas to offer this program in collaboration with regional electric and municipal utilities.

Offerings

CINC provides financial incentives and technical assistance to help building owners and design teams exceed the current energy codes.

CINC targets projects that are early in design to maximize opportunities to employ high-performance building design strategies. There are two pathways to participate. The Best Practices pathway is a prescriptive approach, designed for fast-moving, developer-led projects. This option includes a pre-determined list of measures for specific building types along with resources and guidelines for how to best implement the measures. Incentives are on a per-square-foot basis for implementing the curated package of measures with optional advanced measures. Available building types include warehouse and industrial, large multi-family and assisted living, office, retail, and grocery. The design team can receive an incentive of \$5,000 + 5% of the owner's incentive for accurate submission of the program's design workbooks.

The Performance Path offers a custom hands-on technical approach to new construction projects. This pathway influences the incorporation of high-performance design strategies by using whole building energy simulation to optimize building design for energy performance. Modeling results include incentive amounts for exceeding the current IL Energy Code and annual energy cost-savings estimates. This allows the design team to identify design strategies and technologies that will take their building design further and have the greatest impact on the building's energy use. An additional design incentive is available for the design team through High Performance Design Incentive.

This offering is available for new construction, addition/expansion and major renovation projects in the commercial, industrial, multi-family and public sector markets. Buildings must be at least 5,000 square feet to qualify for participation. Project plans must include (for joint gas and electric service territories) the

improvement of at least two major building systems including lighting, primary HVAC equipment, envelope or qualified refrigeration systems.

Delivery Strategy

Most projects are proactively recruited into CINC through targeted outreach efforts. The outreach team identifies project leads through existing relationships in the northern Illinois design community and by monitoring industry publications and subscription services such as Construction Wire, Curbed Chicago, and Crane's Real Estate Daily. The team leverages relationships with local trade associations such as AIA Chicago, ASHRAE Illinois and Illinois Green Alliance to identify projects that are good candidates for the offering.

Encouraging repeat participation is a key strategy for filling the project pipeline with high-quality projects. In the new construction market, project timelines are long and windows for design influence can be short. Serving this market with credible technical assistance requires established relationships and trust early on. Repeat customers are more familiar with program requirements and value the program's technical assistance offerings and incentives.

CINC provides a high level of technical and analytical support that differentiates it from similar programs in other parts of the country. Where many other commercial new construction programs place the burden of technical analysis on the customer or members of the design team, this offering provides energy modeling and technical consulting as a free service to program participants. This approach is grounded in the reality that energy efficiency is usually lower on the priority list than other design objectives, and financial incentives represent a small fraction of the overall construction budget.

The program is designed to minimize paperwork, simplify the participation process, and deliver rigorous technical information on energy efficiency opportunities at the appropriate time in the design process.

The technical assistance offering is tailored to meet the needs of an individual project. Technical assistance may include any of the following elements:

- Conceptual energy modeling to evaluate tradeoffs early in the design process
- Preliminary recommendations based on industry best practice
- Full energy modeling, quantifying energy savings as well as savings impacts from interactive effects
- Scaled energy modeling (custom spreadsheet analysis)
- Energy model output listing baseline assumptions, recommended energy conservation measures, estimated energy savings, cost savings and financial incentives
- Participation in project meetings with design team and customer
- Presentation/explanation of the energy modeling results to team
- Design assistance
- Research and information on specific energy-saving technologies

Customer Outreach Strategy

The implementation contractor will primarily be responsible for the program's overall education and outreach efforts. The Nicor Gas Energy Efficiency Program team will provide support as needed. The

program will be marketed to building owners and managers, design professionals, trade allies and contractors. Outreach to building owners and managers will be accomplished through case studies, direct marketing, trade ally trainings, education events and Nicor Gas account executive contact or EEP marketing contact.

Communication and outreach to the design professionals, trade allies and contractors will focus on securing involvement in projects early in the design phase. It will stress the value add that better, more efficient buildings can have for their customers and their businesses.

Innovation

The program will stay on top of the latest in new construction practices and technologies, such as high performance windows, gas heat pump technologies, hybrid designs, on-site renewables, microgrids, community designs, and other innovations. The program will look to include these technologies in its measure mix as they are incorporated into the Illinois TRM or deemed acceptable as custom measures through third-party evaluators.

The program will also look at innovative pathways to expand the program design into underserved territories.

Eligible Measures

The available measures are listed in the measure summary report in Appendix A. The key measures in the CINC program include:

- Large Commercial New Construction
- Bonus Incentives

Please see the measure summary report for more details.

Program Targets

The program budget and savings targets are provided in Table 24 below. Please note the figures are rounded to thousands.

Table 24 CINC Program Targets

THERMS	
Gross Therms	617
Net Therms	265
Lifecycle Gross Therms	12,701
Lifecycle Net Therms	5,461
BUDGET	
Implementation Cost	1,605
<u>Incentive Cost</u>	1,451
Total	3,056
\$ / Therm	
\$ / Gross Therm	\$4.96
\$ / Net Therm	\$11.53
\$ / Lifecycle Gross Therm	\$0.24
\$ / Lifecycle Net Therm	\$0.56
COST EFFECTIVENESS	
TRC	2.40
PAC	1.03

5 Innovation Programs

5.1 Innovation Program Overview

There is no one-size-fits-all solution for energy efficiency. Residential customers use energy differently than multi-family customers; industrial customers use energy differently than small businesses. Our solutions must be as diverse as our customers' needs. The Nicor Gas Energy Efficiency Program must continue to innovate and introduce new ideas and options that benefit our customers.

The Nicor Gas Energy Efficiency Program will utilize emerging technologies and market transformation tools and techniques to integrate innovation into its offerings. These initiatives will play a critical role in identifying and demonstrating innovative energy efficiency technologies and enabling cost-effective natural gas energy efficiency savings. Understanding these technologies will allow Nicor Gas to identify market barriers, develop market intervention strategies and accelerate adoption of energy efficiency products or services that create lasting change.

Since the inception of an energy efficiency statute in Illinois, the state legislature has adopted a policy that invites innovation and additional research. The legislature understood program administrators would need access to less traditional mechanisms and methods to overcome certain market barriers, and they elected to allow program administrators to spend a capped amount of the overall portfolio costs on breakthrough equipment and devices and market transformation. Section 8-104 of the Act affords program administrators up to 3% of the portfolio budget to be dedicated to breakthrough equipment and devices and up to 5% of the portfolio budget to be dedicated toward market transformation initiatives.

While today's energy efficiency program model has resulted in measurable end-use emissions reductions, we recognize that sustained change requires an even more comprehensive and innovative approach. It requires looking at all sectors and customer types throughout the entire customer lifecycle, from a developer building a new home in our territory, to a customer turning on gas service for the very first time, to a customer who is well-acquainted with energy efficiency and is looking for the next great savings opportunity. It necessitates a market perspective that identifies barriers and develops interventions to overcome them. Leveraging and developing new technologies and transforming markets can propel all efforts forward well beyond the life of this three-year plan. Nicor Gas has listened to stakeholders, is observant of the changes occurring around us all, and keenly aware that the EE Program must do much more than simply deliver cost effective therms. The programs within this chapter are a major part of our strategy to meet these goals.

5.2 Emerging Technology Program

Nicor Gas recognizes the profound significance that innovation plays in delivering an impactful energy efficiency portfolio to our customers, the Northern Illinois region, the broader U.S., and the world. Energy efficiency is not an isolated program or effort. The innovations developed through the Nicor Gas portfolio intersects and impacts:

- a) All customers large and small by helping reduce natural gas usage, and thus saving money and reducing greenhouse gas emissions;
- b) Income-eligible customers such as seniors, veterans and disadvantaged communities that cannot afford to be left behind in the energy efficiency movement;

- c) Regional, national and global decarbonization efforts to reduce greenhouse gas emissions, and assist Illinois in achieving its climate goals; and,
- d) Innovation involving new technologies and transforming markets to propel all efforts forward well beyond the life of this four-year plan.

Since 2012, the Nicor Gas Emerging Technology Program (ETP) has successfully screened and tested hundreds of technologies to confirm their natural gas-savings and suitability for inclusion in energy efficiency offerings. Nicor Gas will continue to expand the ETP this cycle to support adoption of additional energy-saving measures and build on innovations outlined in the Lessons Learned and Future Considerations section of this chapter.

To further reinforce the path from research and development (R&D) to widespread customer adoption of energy-efficient solutions, Nicor Gas will continue the state-of-the-art and award-winning Market Transformation (MT) initiative. This will focus on identification and removal of key market barriers to maximize program energy savings. The MT initiative allows Nicor Gas to leverage existing ETP efforts and streamline the path to market for new technology developers, all while providing increasingly cost-effective natural gas saving opportunities for end-use customers.

About the ETP

The primary mission of the ETP is to seek out new or unproven technologies that may be suitable for future inclusion in the Nicor Gas Energy Efficiency Program and verify their natural gas savings through field tests and pilot demonstrations. In doing so, the ETP leads the industry by bridging the gap between R&D and widespread customer adoption of energy-efficient solutions. After successfully demonstrating savings, Nicor Gas develops the technologies into new energy efficiency measures to be incorporated into the Illinois Technical Reference Manual (TRM) as prescriptive offerings or to be provided as customized solutions to Nicor Gas customers.

Since its inception in 2012, the ETP has conducted 178 technology evaluations, and approximately 31 of those technologies gained approval for entry into the Illinois TRM as tabulated in the table below.

	Short Technology Name	Measure ID#
1	High Efficiency Commercial Rooftop Units (RTUs)	4.4.11
2	ShowerStart Thermostatic Shower Restriction Valve	5.4.8
3	Multi-family Demand Controls for Central Domestic HW Systems	4.3.8
4	Commercial Ozone Laundry	4.3.6
5	Commercial and Industrial Air Barriers	4.4.33

	Short Technology Name	Measure ID#
6	EcoFactor Leapfrog – Smart Thermostat	5.3.11
7	Destratification fan	4.4.34
8	Commercial Dryer Gas Stepping Retrofit by EZ-Efficiency	4.8.4
9	Moisture Sensor Retrofit for Dryers	4.8.10
10	Residential Ozone Laundry System	5.1.12
11	Spring Loaded Garage Door Hinge	4.8.12
12	Air Deflector for Unit Ventilator (ADUV)	4.4.47
13	Venturi Steam Traps	4.4.16
14	Drain Water Heat Recovery	5.4.11
15	Chemical Boiler Descaling	4.4.49
16	Interior Storm Windows	5.6.7
17	Pipe Insulation	4.4.14
18	Small Commercial Thermostat	4.4.18
19	Heating Load Reduction System (reducing outdoor air)	4.4.45
20	Through-the-wall Condensing Furnace/AC Pac	4.4.40
21	Hydronic Heating Radiator Replacement	4.4.52
22	Warm Mix Asphalt Chemical Additives	4.8.25
23	Process Heating Boiler	4.4.54
24	Greenhouse Heat Curtains	4.1.17
25	Infrared Film for Greenhouse	4.1.18

	Short Technology Name	Measure ID#
26	Commercial Gas Heat Pump	4.4.55
27	Residential Bolt-on Smart Dryer Sensor	5.1.15
28	MF Whole Home Sealing	5.6.10
29	Commercial Tankless Water Heater Array	4.3.13
30	Insulating Concrete Forms (ICFs)	5.6.11
31	Commercial Secondary Windows	4.8.8

These technologies have since translated into over 8M first year therm savings for residential, commercial and industrial customers across Nicor Gas' service territory. The Nicor Gas' ETP has emerged as a national leader and is well-positioned to maintain that standing in the future. Holding a high-profile leadership position is a significant advantage for Nicor Gas, as it opens collaborative opportunities to leverage limited funds and staff while also advancing the overall market in a direction that is conducive to meeting the goals of the Nicor Gas Energy Efficiency Program.

The ETP's Role in Bringing New Technologies to the Marketplace

The ETP plays a unique role within the Nicor Gas Energy Efficiency Program by bridging the gap between R&D and early customer adoption.

R&D occurs near the beginning of the technology development spectrum, where the focus is on prototype development, laboratory validation and field tests. During R&D, a product has not typically been commercialized. Some performance data may be available but is usually limited in scope and may require additional or large-scale demonstration for measurement and validation, often within specific climates or building types.

After the initial R&D has been conducted by technology developers, the ETP steps in. The ETP's initial efforts seek to identify products that have the potential to reduce customers' natural gas consumption, reduce greenhouse gas emissions, or otherwise assist with broader decarbonizations efforts, and could thus be candidates for inclusion in the Nicor Gas Energy Efficiency Program as prescriptive or customized offerings. Technology developers can also submit their products to the ETP for program consideration. Regardless of how candidate technologies are identified, the ETP assesses a technology's market potential and validates performance and gas savings. Specific activities during this phase include:

- Assessment of a product's commercial readiness
- Evaluation of performance data, benefits, market barriers, costs and availability of service networks

- Deployment of demonstrations and scaled field placements that expand technical and market understanding of performance, reliability, and serviceability
- Development of cost and energy data for use in creating savings goals and greenhouse gas emissions metrics
- Generation of information in support of market transformation activities, with a specific focus on such topics as deployment challenges, training guidelines and contractor relationships
- Recommendation of incentive levels and other components of customer offerings such as identifying whether a measure should be prescriptive versus custom and best practices for installation and calculating savings
- Dissemination of information on products and services that can assist in training, education, and outreach efforts

In addition to the core activities described above, the ETP publishes case studies, supports the Illinois TRM update process, offers trainings and provides best practice guidance on technologies for trade allies, Nicor Gas customers, and other market actors. These efforts help maintain the pipeline of new energy efficient natural gas technologies upon which ETP, the Nicor Gas Energy Efficiency Program, our customers and the broader communities rely to meet energy efficiency and decarbonization goals.

It is important to note that the ETP is not a resource program, meaning there are no energy savings goals for the ETP itself. Rather, ETP conducts research and generates information that leads to informed decision-making within the larger Nicor Gas Energy Efficiency Program. This informed decision-making helps ensure that the Nicor Gas Energy Efficiency Program captures low-risk, cost-effective energy savings while also keeping the program at the forefront of new technology development and innovation.

Two Approaches to Accelerating Technology Adoption

Depending on whether a technology is new to the marketplace or is well-established and merely underutilized, the ETP takes differing approaches to accelerate widespread adoption:

- **New measure or practice:** This path begins by scanning a variety of sources to identify potential emerging technologies and practices that are best positioned to meet the energy efficiency needs of Nicor Gas customers. The ETP team then uses a screening, scoring, and selection system to identify the most promising technologies and practices for review, evaluation, and/or pilot assessment in an ETP project.
- **Existing measure or practice:** This path harnesses the collective experience and insights of the larger Nicor Gas Energy Efficiency Program to assess and enhance existing offerings. Key activities may include enhancing program designs, developing new market delivery strategies, improving product offerings, and/or looking into new technology applications.

A streamlined version of the screening, scoring, and selection system, determined on a case-by-case basis, can be used to evaluate any EE program enhancement. This streamlined process may also be used for technologies that are determined by the ETP to already have sufficient available data and justification for inclusion in the Nicor Gas Energy Efficiency Program, without the need for an ETP field-based pilot.

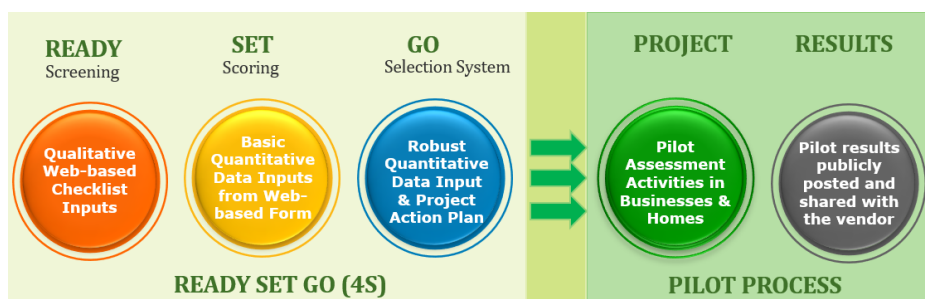
The Stage-Gate Process

The Nicor Gas Emerging Technology Program (ETP) uses a screening, scoring, and selection system (4S) or Ready, Set, Go for simplicity. The 4S system will process a range of project applications and help

determine which are developed into pilot assessment projects. All emerging technologies submitted to the Nicor Gas ETP must follow all local, state, and federal regulations.

First, every application is analyzed through the Ready, Set, Go (4S) process, and then it is determined if the application is eligible for a pilot assessment. The process is briefly explained in the diagram below.

Figure 7 Ready, Set, Go, Project Process



Ready: The Ready process is a short, mostly yes/no questionnaire that can be completed in approximately 5 minutes or less. It gathers basic information about the emerging technology proposed for inclusion in the Nicor Gas Emerging Technology Program. After completing and submitting this questionnaire, it will be automatically reviewed to determine if it meets the necessary program requirements. If it does, the applicant will immediately be directed to the Set stage. If not, the applicant will receive automatic feedback on any areas of concern.

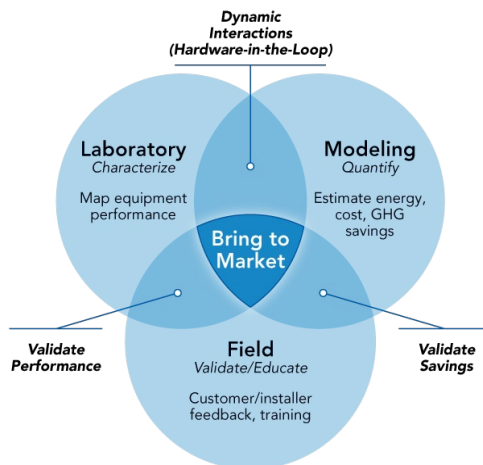
Set: The Set process requests further details about the emerging technology under consideration. The data request form at the Set stage asks for specific quantitative information, such as the installed price of the technology, its estimated service life, estimated annual natural gas savings, and other key questions. Once the applicant completes this form, they will be directed to a customer feedback survey to solicit any user feedback and help identify any needed improvements. The information gathered in the Set process will be reviewed by an Emerging Technology Program team member. The applicant will be informed about the status of their application within 2 to 4 weeks after submittal if the Emerging Technology Program team plans to recommend their application to proceed to the Go stage.

Go: The Go process is handled jointly by the applicant and the Emerging Technology Program team. Information gathered at the Set stage is reviewed and additional, third-party data sources are used to make the review even more robust. Within 4 to 8 weeks of initial submittal, the applicant will be informed if the Emerging Technology Program team plans to recommend their application for an Emerging Technology Program pilot assessment project. The Emerging Technology Program team presents final recommendations and proposed Action Plans to the Technical Review Committee, which will make the final endorsement on the selection of pilot assessment projects. Applicants will be notified promptly of the final decisions.

Project: After an application is selected for a pilot assessment, ETP team will undertake one or a combination of the following approaches based on application specific requirements to execute the pilot assessment.

- Field evaluation
- Laboratory evaluation
- Energy modeling

Figure 8 ETP Project Approaches



Pilot assessment test plan will be shared and coordinated with the vendor/applicant prior to the commencement of the project.

Results: Pilot assessment will involve data collection and streaming as per the test plan to be able to view continuous progress and provide early insights to the vendor. After completion of the project, a full analysis will be performed, and results will be shared with the applicant/vendor for review and a final pilot assessment report will be made publicly available and will also be provided to the applicant/ vendor.

ETP Value

In an environment where portfolio cost-effectiveness is increasingly harder to achieve and every ratepayer dollar must be carefully directed, ETP's ultimate role is to help the Nicor Gas Energy Efficiency Program decide which technologies can facilitate meeting its goals while mitigating the risks that are inherent with offering any new or unproven technologies to customers.

Since inception, the ETP has supported the development or enhancement of numerous energy efficiency offerings. Perhaps just as importantly, the ETP has also filtered out technologies that were unsuitable for efficiency programs due to long payback periods or low value to the overall portfolio. This has allowed the Nicor Gas Energy Efficiency Program to direct its resources to measures with reliable savings.

Additionally, because the ETP acts to accelerate verified efficient, emerging technologies, even customers who do not directly participate in Nicor Gas Energy Efficiency offerings can reap the rewards of the ETP's work through a marketplace that has a greater variety of proven high-efficiency technologies.

Partnerships and Collaborations

To leverage limited resources, the ETP works with partners across North America. In addition to stretching ETP funds, these collaborative efforts keep the program at the forefront of the industry and facilitate the early identification of new technologies with significant potential. Some of the collaboratives, partners, and subscriptions that the ETP has joined, formed, or is currently considering include:

- The US DOE's Advanced Research Projects Agency-Energy (ARPA-E) program
- Other utility program administrators in Illinois (both gas and electric, when appropriate)
- Non-Illinois-based utilities
- The Northwest Energy Efficiency Alliance (NEEA)
- The California Emerging Technologies Coordinating Council
- Chicago-based Clean Energy Trust (CET)
- GTI Energy
- Research Park at the University of Illinois
- Manufacturing R&D groups
- Product trade associations
- FreshPatents.com

Collaboration with utilities both inside and outside of Illinois can bring particularly significant benefits. Through partnering, some utilities may be able to utilize the ETP's established methods and processes—that might otherwise take the outside utilities another 3 to 5 years to independently develop—in exchange for shouldering a portion of the operational costs of the pilot. This allows the Nicor Gas Energy Efficiency Program to leverage statutorily limited ETP funding, ideas, project host sites, and information to complete more work. Because of these benefits, collaborative initiatives with one or more Illinois-based Plan Administrators are expected to expand.

Because maintaining a robust and far-reaching collaborative network is an important component of accelerating early-stage products and systems to market, and by extension, utility EE programs, the ETP will continue to explore additional collaboration opportunities as they present themselves. These collaboration opportunities include partners within Illinois and the Midwest, as well as from groups around the country and abroad. To further facilitate enhanced collaboration opportunities, Nicor Gas may consider sponsoring events such as forums with universities and other early-stage entities to share ideas and network.

Lessons Learned and Future Considerations

Lessons learned from previous program cycles have created a strong foundation for the current ETP cycle. The ETP continues to evolve as it adapts to key findings and trends.

- **Shifting from “Widgets” to “Solutions”:** For many years, emerging technology work across the utility industry tended to focus on discreet technologies that could replace incumbent products to provide incremental savings. However, technical advances and increasingly constrained resources are creating a shift away from this old paradigm. Utilities are increasingly focusing on whole-building solutions, savings opportunities that merge products and services, or other ways to deliver more comprehensive energy savings and provide customers with ancillary benefits, such as increased comfort or convenience or helping them achieve greenhouse gas reduction goals. The ETP will continue to expand work into the area of providing holistic solutions to customers whenever possible.

- **Market Viability:** The market viability evaluation was added to the stage-gate process to verify whether there is an actual market for the product in question before embarking on a potentially costly test or pilot. This marks a novel strategy that few utilities pursue. By carefully evaluating the commercial viability of products in addition to their technical feasibility, the ETP reduces uncertainty and, subsequently, the cost of launching measures and maintaining the EE portfolio.
- **Tracking Trends and Adapting:** Not only do individual technologies advance and improve, but the entire marketplace is evolving. It's critical for the ETP to monitor these meta changes and adapt operations and strategy. For instance, wireless technologies and cloud computing have revolutionized entire swaths of the technology industry and have, in turn, opened new opportunities for ETP applications that were previously cost-prohibitive.
- **Active Participation from Product Makers and Vendors:** A contribution by interested parties into ETP projects is vital to program success and is now required of companies and other entities wishing for their product to be tested and evaluated by the ETP. This commitment can be satisfied in several ways, including supplying the ETP with product samples at no cost for evaluation, assisting with pilot site identification, and/or providing installation and configuration assistance.
- **Pilot Site Selection:** Finding candidate sites and facilities to install and test pilot evaluations remains a significant challenge. The details range from interrupting business operations to allow for installation of new equipment to commercial manufacturers having to alter entire production processes. The ETP has been successful in finding key partners who can serve as test sites or hosts for new demonstrations. These relationships can significantly speed the pilot activities in the field.
- **Product Development Process:** The ETP will adopt components of traditional product marketing utilized by many consumer product companies. These techniques include determining how the consumer perceives Nicor Gas Energy Efficiency offerings and what level of incentive is enough to drive an energy efficiency upgrade.
- **Product Technology Mix:** It is critical to consider whether a product's energy impacts are affected by seasonal variation, as this variation can necessitate longer testing timeframes. For example, if a product is only operated during the heating season, everything required to test must be properly in place before the heating season begins or else the pilot risks an entire year of delay (and of subsequent customer incentive launch). To help mitigate this risk, the ETP will look for a balanced product mix of heating and non-heating season products so there are always multiple pilots to run.
- **Advancing Mature but Underutilized Technologies:** Though new technologies are continually entering the market, the ETP also emphasizes existing technologies that never attained significant market adoption. Due to changing market conditions such as low gas prices, demographics, consumer desires, decarbonization policies, product pricing, or improved performance, these previously non-viable products may now be able to penetrate the market.
- **Serving All Customer Segments:** The ETP aims to maintain a diverse mixture of products across all market sectors to maximize the number of energy-saving opportunities.

ETP Budget

The ETP budget for 2026-2029 is shown in Table 25 below.

Table 25 ETP Budget (in thousands)

Program	2026	2027	2028	2029	Total
ETP	\$1,734	\$2,102	\$2,102	\$2,102	\$8,040

5.3 Market Transformation Program

Nicor Gas is continuing to advance its award-winning Market Transformation (MT) program. The goal of MT is to identify and remove market barriers associated with new measures or offerings by intervening in the market to overcome those barriers. Over time, MT will result in lower cost delivery and maximize energy savings achieved within the Nicor Gas Energy Efficiency Program. MT activities dovetail well with existing ETP efforts by creating a faster pathway to market for fledgling technology developers, while providing increasingly cost-effective natural gas-saving opportunities to end-use customers.

Nicor Gas' Market Transformation Efforts in an Evolving Landscape

Great progress has been made in Illinois to establish a framework for MT within the statewide Technical Reference Manual (TRM). This framework outlines the overall MT principles and the mechanism for MT activities to claim savings over time. These savings may even extend beyond the four years of this plan. Market Transformation sets the stage to advance strategies beyond simple rebates to more market-wide approaches reaching more customers and creating deeper long-lasting savings by transforming the market.

Nicor Gas recognizes that MT activities are closely aligned with traditional ETP work, and that coordinating both efforts internally can reap additional benefits. These include leveraging staff and research efforts, strengthening and sustaining the pipeline of technologies and solutions that feed into EE programs. This helps to cultivate partnerships with other research organizations who have regional, national, and international reach.

The MT program will play a pivotal role in increasing customer adoption of Nicor Gas Energy Efficiency Program offerings through identification and removal of market barriers that currently hinder broad application of these technologies and solutions. At a higher level, Nicor Gas' MT program can also enable other regulatory and societal benefits, including serving disadvantaged communities, strengthening Illinois gas-electric utility partnerships, supporting environmental sustainability goals and increasing overall customer satisfaction.

MT Process Overview

The Nicor Gas MT process follows a series of steps adopted from best practices to expedite market transformation effects:

1. **Identify Market Barriers:** The first step is to identify market barriers that hinder adoption of energy-efficient products, services, and practices. This includes the evaluation of high-potential technologies and examines barriers that may include product availability, quality or price; lack of financing; insufficient technical capability or tools; or low awareness of business benefits.
2. **Assess Opportunities and Leverage Points:** In the next step, a comprehensive market investigation and analysis is conducted. To overcome barriers identified in the previous step, it is critical to identify opportunities to achieve maximum market uptake and to exploit those opportunities fully. During this stage, a comprehensive plan is developed that outlines the barriers and opportunities that can help achieve the full market potential for energy efficient products, services, or practices.
3. **Implement Market Interventions:** In this step, the comprehensive MT plan developed in the previous step is executed.
4. **Evaluate and Adjust Initiatives:** As the implementation process moves forward, the components of the project and overall strategy must be evaluated and adjusted as needed. Because markets are dynamic, it is critical that the MT process be flexible and adaptable.

Because MT depends on behavioral change, intervention approaches should focus primarily on people and their actions, and secondarily on the underlying technology innovations. In some cases, changes to the technologies or services are needed to enable the intended changes in the behavior of the market decision makers.

Market Transformation Opportunity Areas

The MT program will investigate opportunity areas during the proposed Amended EEP. The MT program will identify and validate various market intervention strategies to alleviate the barriers associated with each opportunity area, with the aim of increasing technology adoption. Through these intervention strategies and as referenced in the residential Market Transformation Initiative ("MTI") program component in Appendix A, Nicor Gas is estimated to achieve 76,776 therms in market effect savings over the next four years due to some of the MTI efforts listed below.

- 1) **Leverage MT platform to enhance ETP:** Since the ETP does not directly intervene in the market, the technologies and products validated in the ETP can benefit from MT initiatives for enhanced customer adoption. In many cases, new or underutilized technologies successfully evaluated in ETP may need additional market interventions such as support network development and/or installer or trade partner education for successful adoption in the marketplace.
- 2) **Advanced Windows:** The Company will continue its ongoing collaborative market transformation initiative to promote high performance windows.
- 3) **Gas Heat Pumps:** The Company will continue its ongoing market transformation initiative to promote gas heat pump technology and solutions in both the residential and commercial market.
- 4) **Efficient Roof Top Units:** The Company will continue its ongoing collaborative market transformation initiative to promote the adoption of efficient roof top units among commercial customers.
- 5) **Novel Ideas and Strategies:** The MT program will also seek to invest resources and intervene where it is deemed appropriate and beneficial to Nicor Gas Energy Efficiency Program and Nicor Gas customers. A few additional opportunities that MT will consider exploring in 2027-2029 and beyond may include work that intersects and impacts:

- All customers large and small by helping reduce natural gas usage, and thus saving money and reducing greenhouse gas emissions.
- Income-eligible customers such as seniors, veterans and disadvantaged communities that cannot afford to be left behind in the energy efficiency movement.
- Regional, national and global efforts to reduce greenhouse gas emissions, and assist Illinois in achieving its climate goals.
- Innovation involving new technologies and transforming markets to propel all efforts forward well beyond the life of this three-year plan.

MT Budget

The MT budget for 2026-2029 is shown in Table 26 below.

Table 26 MT Budget (in thousands)

Program	2026	2027	2028	2029	Total
MT	\$2,890	\$3,870	\$3,870	\$3,870	\$14,500

6 Portfolio Support Functions

6.1 Overview

This chapter describes the business functions that support the programs outlined in chapters 2 through 4. While chapters 2 through 4 describe the approaches used to deliver programs to customers, this chapter describes the support functions required to develop, market, track, evaluate, and administer those programs.

This chapter includes the following sections:

- Section 6.2 describes the Administrative functions required to support the overall portfolio.
- Section 6.3 describes the Marketing and Outreach (MOC) activities that increase awareness of program offerings, encourage customers and trade allies to participate, and provide ongoing support through the MOC call center platform.
- Section 6.4 describes the Evaluation, Monitoring, and Verification systems used to confirm program savings and improve program processes and performance.
- Section 6.5 describes the Information Technology platform that supports the marketing, tracking, analysis, and evaluation of program activities.
- Section 6.6 describes the Planning systems used to develop, analyze, and adjust the program portfolio through annual and four-year planning cycles.
- Section 6.7 describes the Market Development Initiative activities which will invest in workforce and business development for underrepresented populations and economically disadvantaged communities, combining research, development of a market development action plan, and contractor and workforce support.

Nicor Gas appropriately allocates support function costs to each individual program and includes those allocated costs as part of the implementation costs (i.e., non-incentive costs) values shown in tables at the end of each program section. Nicor Gas costs that reflect activities not directly supporting individual programs are tracked as portfolio costs and reported in this chapter.

6.2 Portfolio Administration

This section addresses the portfolio support functions not addressed in the other sections of Chapter 6.

Accounting and Finance

This function manages the financial transactions necessary to administer the Nicor Gas portfolio. The Nicor Gas EEP has established comprehensive financial systems within the broader Nicor Gas and Southern Company financial systems to:

- Develop and manage budgets
- Pay implementation contractors, trade allies and other vendors
- Track accounts payable
- Track spending by program, support function, cost type and time period

- Provide financial data in reports to management, the Illinois Commerce Commission (ICC), and stakeholders
- Provide financial controls

Regulatory and Stakeholder Support:

This function manages communications, reporting, and other coordination with the ICC and various stakeholder groups.

Regulatory support functions include:

- Preparing filings and participating in regulatory proceedings before the ICC, including proceedings for approving the EEP, setting rates to recover the costs of administering the EEP, reconciling costs spent on administering the EEP, and verifying savings generated by the EEP
- Preparing quarterly and annual reports documenting EEP spending, savings, and activities
- Managing the systems required to track the spending, savings, and activities included in regulatory filings and reports

Stakeholder support functions include:

- Participating in the Illinois SAG process, including serving on the SAG Management Committee, participating in SAG Large Group Meetings, participating in the SAG Portfolio Planning Process, and providing presentations for SAG members
- Participating in subcommittees that periodically update the Energy Efficiency Policy Manual and TRM Policy Document
- Participating in the SAG Technical Advisory Committee which annually updates the IL TRM
- Participating in the SAG NTG Policy, which annually updates NTG values used to calculate program savings
- Participating in SAG working groups that cover topics such as Evaluation approaches, Non-Energy Impact calculations, Market Transformation strategies, and Fuel Conversion strategies
- Participating in other SAG subcommittees, which in the past have covered topics such as approaches for encouraging Combined Heat and Power systems and approaches for documenting energy efficiency successes.
- Participating in Low Income Advisory Committees, including committees operating in both Northern and Southern Illinois, to work with other utilities, state and local agencies, community-based organizations, and other stakeholders to improve services to income-eligible households and to inform the MDI.

Procurement

This function manages the strategic procurement, contracting, and vendor administration activities that support the successful delivery of Energy Efficiency offerings and ensure compliance with organizational and regulatory requirements. Key activities include:

- Developing and implementing procurement strategies that support Energy Efficiency portfolio objectives and operational priorities
- Leading competitive sourcing and request for proposal (RFP) processes for implementation contractors and vendor services
- Negotiating and managing contractual documents, including master service agreements, scopes of work, and related procurement documentation

- Monitoring, analyzing, and reporting procurement performance to support informed decision-making and regulatory compliance
- Collaborating with Business Engagement Partnership (B.E.P.) to strengthen strategic partnerships, broaden contractor engagement, and enhance collaboration with local, small and veteran-owned businesses.

Overall Management

This key area provides administrative oversight to key department functions, including employee development, safety, logistics planning, procurement, and departmental cross-functional engagement including interaction with internal Nicor Gas stakeholders and senior leadership to support Energy Efficiency and organizational effectiveness.

6.3 Customer Outreach

Customer outreach is critical to achieving our overall portfolio savings goals for the program. From mass media campaigns to in-person events, customer outreach plays an important role in educating customers, trade allies (TAs) and collaborators. These elements and activities help drive participation across the Nicor Gas service territory.

Customer Communication Strategy

The Nicor Gas Energy Efficiency Program's communication strategy has continued to evolve since the program's inception. We use a mix of engagement efforts, from bill inserts to mass media campaigns to hyperlocal print publications and more, to reach customers across the territory. Our efforts have become more targeted to reach a multitude of audiences, prioritizing the customers who need the most support. This approach has helped us execute more effective customer engagement tactics, reinforce barrier-free participation, and curate more personalized experiences. The program's customer outreach strategy for the proposed Amended EEP will continue to build on this foundation while exploring additional avenues to elevate engagement. By leveraging key resources, including the dedicated Marketing and Outreach Center (MOC), Community Connection Center (C3) and the energyENGINE data warehouse, the Nicor Gas Energy Efficiency Program will achieve a balance between broad awareness, targeted outreach and relevant communications for engagement.

Trade Ally Communication Strategy and Outreach

The Nicor Gas Energy Efficiency Program's trade ally (TA) communication strategy employs a robust communication mix that includes targeted emails, distributor specific content, educational webinars, one-on-one meetings, roundtables and more. Part of the strategy includes supplying many resources for trade allies, including the dedicated Trade Ally and Contractor Circle sections on nicorgas.com and collateral material that supports specific offerings and customer education. Trade allies install products, provide services and/or support the Nicor Gas Energy Efficiency Program in many ways and the outreach team ensures that trade allies have tools from our team to help provide superior customer experiences and quality installations. We provide trade ally training on program offerings, technical topics, safety, sales, energy efficiency, etc. As rebates change and new offers are introduced to the program, the communication and outreach team helps to develop and support training and update sessions to keep contractors engaged in the program evolution and to provide service and support to customers.

The portfolio also has an exclusive trade ally initiative called Contractor Circle that offers two types of memberships.

- Contractor Circle installing membership (CCim) is for trade allies who install rebate-qualifying products or services. For example, HVAC companies who install furnaces, or weatherization contractors who provide air sealing and insulation services, fall into this category.
- Contractor Circle supplier membership (CCsm) is for companies who do not install products, but they support the program in other ways such as distributing or manufacturing rebate-eligible equipment or provide training that supports the Energy Efficiency Program.

CCim program eligibility is contingent on meeting minimum program participation levels. Membership offers many benefits including, but not limited to, inclusion in our “Find A Contractor Tool,” the ability to provide instant discounts and energy efficiency loans, approval to use the Contractor Circle logo on print and website, and access free outreach materials (some of which are customizable with contractor information). This component has not only driven cost-and energy-saving support for our customers but has also provided local businesses with a continuous pipeline of projects within the expanding energy efficiency market.

Nicor Gas Energy Efficiency Program Awareness

Through customer and contractor feedback, we continue to find that broad awareness and education about Nicor Gas Energy Efficiency Program offerings, the website (nicorgas.com) and online resources (such as our Find a Contractor tool) are essential to keep the program front of mind for customers and contractors. As such, we will continue to layer the communication and outreach strategy with messages that inform customers and contractors of the program through channels including:

- Grassroots community outreach events and presentations, collaborating with community-based organizations, local and statewide agencies and other entities (e.g., Community Connection Resource Fairs, Fire Department Open Houses, senior fairs)
- Traditional media outlets (e.g., digital, television and radio outlets)
- Bill inserts, emails and other customer communications as well as trade ally-specific engagement elements

We have developed a centralized section of the company website (nicorgas.com/waystosave) that will continue to serve as the main online portal for educational resources and information. The Marketing and Outreach Center and the Trade Ally Outreach teams are the front line for outreach, service and support for customers and contractors. The relationships forged with community groups and organizations will help us continue to provide education about our free offerings and services to income eligible customers, and we will keep expanding this network.

energyENGINE Segmentation and Targeting

Building on data from energyENGINE, the Nicor Gas Energy Efficiency Program’s data warehouse, the program will continue to create more relevant, personalized experiences for our customers by customizing communications based on market data and past participation, as well as engaging them in-person with energy-saving kits and relevant program collateral at outreach events. The Nicor Gas Energy Efficiency Program will also incorporate digital media and search engine optimization to complement the personalized, hyperlocal customer experience.

Customized communications and outreach efforts may include, but are not limited to:

- Email communications
- Bill inserts
- Outbound call campaigns
- Multicultural communications
- Community partnerships and outreach events, such as resource fairs and community forums

Through customized email communication, the Nicor Gas Energy Efficiency Program has significantly increased engagement and education by developing messaging based on customer data gathered within energyENGINE.

The Nicor Gas Energy Efficiency Program will also continue to emphasize ways all customers can participate, regardless of income. From distributing free energy-saving kits and sharing money-saving tips at food pantries and during resource fairs, to promoting free offerings, program outreach and communications will expand their resources to meet more customers where they are to encourage savings at any income level.

The Nicor Gas Energy Efficiency Program will also continue to reach customers through their preferred communications channels, whether via phone or email interactions, traditional media outlets or local/cultural publications, or their trusted local leaders and community groups.

Customer and Trade Ally Satisfaction

Customer and trade ally feedback help shape the Nicor Gas Energy Efficiency Program – from the structure of the portfolio to program implementation design to the language used to describe the offerings. During the previous four-year plan, customer journey-mapping and focus groups resulted in more streamlined communications and the removal of some major pain points in the participation process. For example, customers missing required information on their rebate application submissions now receive a phone call from our outreach team in addition to receiving a letter in the mail so that we can ensure that we explore every communication avenue to try to rectify the issue. As an ongoing part of the program's communications and outreach strategy, direct customer research, trade ally roundtables, surveys, and focus groups will continue to be used to continuously improve our messaging and customer experience. We want to ensure that our messaging is relevant and effective.

6.4 Evaluation, Measurement and Verification (EM&V)

Evaluation, measurement, and verification (EM&V) are the processes used to improve the operations of energy efficiency programs, measure their impacts, and attribute energy savings to utility efforts. EM&V processes include:

- Site visits to confirm proper installation and operation of installed measures.
- A range of methods to measure or estimate energy savings and other program impacts
- Participant surveys and other approaches to estimate free-ridership, spillover and net-to-gross (NTG) ratios.

- Collaboration for developing and measuring evaluation methodologies for market transformation initiative leveraging Illinois Technical Reference Manual market transformation protocols.
- Process evaluations that assess program operations and make recommendations to improve performance.
- Analyses of cost effectiveness and non-energy impacts associated with program performance, such as total resource cost analysis and non-energy impacts.
- Maintenance of data and communications systems.

Section 8-104 of the Act requires gas utilities to provide quarterly status reports on program performance, annual independent evaluations of programs, and an independent evaluation of the overall portfolio at the end of each four-year EEP cycle. Section 8-104 also designates that a maximum of 3% of the portfolio budget may be expended on EM&V. Table 3, provided above in Section 1.9, provides proposed EM&V expenditures in each year for the costs of the external consultants serving as the Nicor Gas Independent Evaluators. These budgets do not include costs for additional evaluation activities, such the costs for EEP staff, consultants, attorneys, and program implementers incur to support evaluation efforts.

Evaluation activities generally fall into three categories: the impact evaluations that measure and verify program savings, market transformation evaluations measuring the market related to the natural market baseline and process evaluations that improve program performance. In addition, the EM&V function maintains systems to collect, track, and share evaluation data and to coordinate with evaluation contractors, stakeholders, and other utilities.

Impact evaluations determine program impacts using a range of metrics. Impacts are measured against program goals and include energy savings, cost-benefit ratios, number of participants, number of free-riders, spillover impacts and other measurable quantities. Impact evaluations use a variety of direct and indirect methods, including:

- Direct metering of individual equipment to compare energy use before and after measure installation, sometimes coordinated with statistical methods that account for changes in weather, occupancy, production or other factors affecting energy use
- Analysis of customer energy bills, comparing energy use before and after measure installation, again sometimes coordinated with statistical methods to account for external factors affecting energy use
- Randomized controlled trials or similar quasi-experimental methods that compare energy use for participating customers to usage from carefully selected control groups
- Application of algorithms from the Illinois Energy Efficiency Technical Reference Manual (TRM) or other customized algorithms that calculate energy savings from performance data such as equipment efficiency, capacity, and operating hours

Process evaluations determine if individual programs perform as designed and effectively reach targeted customers. Process evaluation methods include:

- Surveys, focus groups or other information collected from program actors, including customers participating (or not participating) in programs, trade allies delivering programs, and internal and implementation contractor staff managing programs
- Analyses of program procedures and workflows
- Comparisons to benchmarks and best practices at other utilities
- Development of program theories, customer journey maps, or similar techniques that identify key market barriers and the effectiveness of the program in overcoming barriers

Market Transformation (MT) evaluation is theory-based evaluation to estimate savings attributable to the MT initiative. Energy savings from MT initiatives are the end result of an increased and accelerated

market adoption over and above a hypothesized future that would have happened without the MT initiative. This evaluation is referenced in Attachment C: Framework for Counting Market Transformation Savings in the Illinois Technical Reference Manual (IL-TRM) Volume 4 and includes:

- Logic models which provide the relationships and connections between program activities and anticipated changes in the market over the short, medium, and long term.
- Energy Savings frameworks and Natural Market Baseline (NMB) relate to a MT initiative, which is a market forecast of the future in which no utility-funded energy-efficiency programmatic intervention exists.
- Market Progress Indicators designed to judge whether the program is achieving its intended outcomes.
- Assessments of MPIs will require incorporation of multiple judgements of progress based on a preponderance of evidence approach.

The Nicor Gas Energy Efficiency Program will use an independent evaluation contractor to evaluate the portfolio. The independent evaluator will support portfolio goals by providing high confidence and precision in measuring program and portfolio savings, without exceeding statutory budget limits. Statutory limits will apply at the portfolio level over the entire four-year portfolio period.

The independent evaluator will develop program evaluation plans for the entire four-year period and for each individual year. These plans will identify specific elements for evaluation, a schedule for activities, and budgets for each program and for portfolio-level activities. Nicor Gas and other stakeholders will review and comment on plans to ensure consistency with program implementation and other goals. Because some evaluation work must be conducted after a program or project is completed, spending in any given year may be associated with program operations from earlier years.

EM&V can be improved through collaboration with other utilities. Nicor Gas will share the expense of EM&V and minimize EM&V duplication with ComEd and other utility partners to maximize evaluation usefulness and cost-effectiveness.

6.5 Portfolio Technology, Business Intelligence and Data Analytics

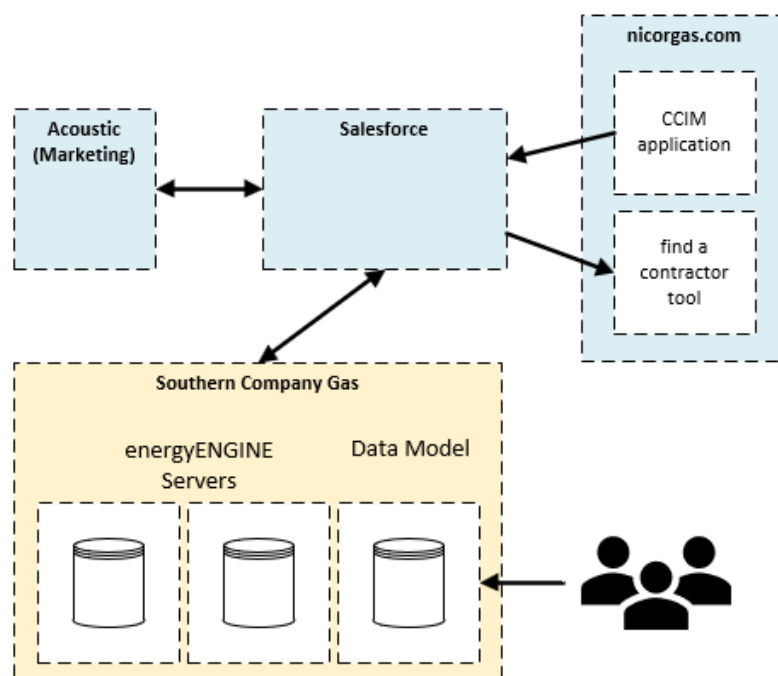
Since 2010, the Energy Efficiency Information Technology infrastructure has undergone five implementation phases. Moving forward, we will continue to evolve this infrastructure, incorporating the new enhancements in a phased approach to ensure seamless integration and minimal disruption to ongoing operations.

The Nicor Gas Energy Efficiency Program will continue to focus on the ongoing development and enhancement of a robust platform to support its software and cloud infrastructures, data warehouse, analytics, and security. Our data warehouse, known as “energyENGINE,” will be further refined to handle the increasing volume of customer participation data that needs to be collected, stored, analyzed, and reported on by both internal and external parties.

An updated, high-level schematic of this infrastructure is shown in Figure 11, and its evolution is described in the following chart. A summary of each phase is listed below.

#	Date	Description
1	2010	Project Management Tool (PMT) creation
2	2013-2015	SQL Server data warehouse creation & Salesforce implementation
3	2016	Trade Ally and EM&V tracking implementation
4	2018-2019	Data model and data analytics creation
5	2022-2024	Data warehouse migration and transition from vendor to internal servers
6	2026-2029	Advanced analytics, artificial intelligence, and automation initiatives

Figure 9 Nicor Gas Energy Efficiency Information Technology Infrastructure



Phase 1 (2010):

The initial goal was to acquire or modify software to manage the Nicor Gas Energy Efficiency Program (EEP) effectively. The Company partnered with a third-party vendor to develop the Project Management Tracking (PMT) system, which tracked customer activities, expenditures, and therm savings. Key features of PMT included:

- Program Design: Maintained a database of energy efficiency measures
- Program Management: Managed program performance, costs, project statuses, and provided measure-level reporting
- Workflow Management: Managed project workflows and maintained historical records for analysis and reporting
- Incentive Processing: Efficiently processed incentive payments to participants and tracked incentives by customer account
- Management Reporting: Offered various reporting capabilities, including:
 - Executive/Management: High-level performance statistics
 - Program Management: Detailed reports to monitor program progress
 - Regulatory: Provided reliable data to support EEP performance against approved plans

Phase 2 (2014):

In 2014, the Nicor Gas Energy Efficiency Program (EEP) transitioned from the PMT system to a SQL Server-based data warehouse (energyENGINE) and a Customer Relationship Management (CRM) application (Salesforce). This phase focused on integrating data from multiple sources into a single platform, enhancing data analysis and customer engagement. Key data sources included:

- energyENGINE customer participation
- Customer utility billing data
- Utility data for larger customers
- Demographic data from third-party providers
- Planning data representing TRM values

A new vendor provided a best-in-class data warehouse, reporting, analytics, and CRM tool, offering the following benefits:

- Data Integrity - Established a central "Single Source of Truth" for all data, improving trust and addressing issues like version control and data drift
- Operational Efficiency - Reduced manual data aggregation, allowing more time for high-value activities and quicker data availability
- Ad-hoc Analysis - Enabled customized reports and data sets for efficient business inquiries
- Regulatory Reporting - Automated standard reports, freeing resources for value-creation activities
- Customer Engagement - Implemented an integrated platform for call center operations and email marketing (ExactTarget)

Phase 3 (2016):

In 2016, the Nicor Gas Energy Efficiency Program (EEP) further enhanced energyENGINE by adding two new modules: Trade Ally Management (TA) and Evaluation, Measurement, and Verification (EM&V).

Trade Ally Management:

This module centralized the collection, storage, and reporting of Trade Ally data, previously managed by implementation contractors. Key benefits included:

- Creation of a comprehensive master Trade Ally list
- Utilization of Salesforce for data collection and documentation of interactions with Trade Allies
- Integration of Trade Ally data into the data warehouse for detailed job and performance tracking
- Electronic storage of Trade Ally-related documents

EM&V:

In collaboration with Navigant, the EM&V module aimed to streamline the evaluation process. Objectives included:

- Reducing evaluation time by providing near real-time performance data and savings information
- Creating a central repository for energy savings data required for annual evaluations
- Eliminating data requests between evaluators and implementation contractors, thus improving data quality and speeding up evaluation activities

In 2016, the Nicor Gas Energy Efficiency Program made further enhancements to energyENGINE. As the program continued to mature, data needs continued to develop and grow, and increased efficiency opportunities presented themselves. Nicor Gas undertook adding two new modules to energyENGINE: Trade Ally Management and Evaluation, Measurement and Verification (EM&V).

Trade Ally Management:

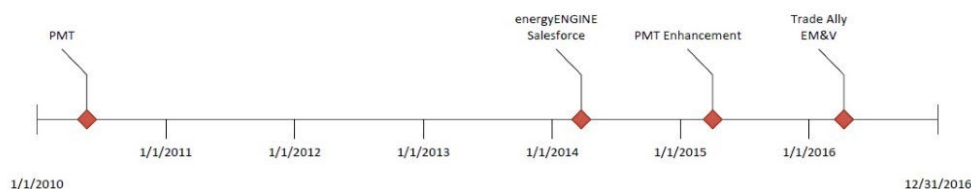
The goal of the Trade Ally Management module is to provide a centralized location for collecting, storing, and reporting Trade Ally data. The Trade Ally systems previously resided with Nicor Gas Energy Efficiency's implementation contractors ("ICs"). Adding this capability in-house provided for:

- The development of one comprehensive master Trade Ally list for reporting purposes and management
- Salesforce capabilities for Trade Ally data collection as ICs and EEP employees have the capability of documenting conversations from meetings, events and encounters with Trade Allies
- Trade Ally data points into the data warehouse
 - Nicor Gas is able to identify the number of jobs by trade ally, as well as the offerings and measures that each trade ally has performed in the program
- Electronic storage for Trade Ally-related documents

EM&V:

In collaboration with Navigant, the EM&V module aimed to streamline the evaluation process. Objectives included:

- Reducing evaluation time by providing near real-time performance data and savings information
- Creating a central repository for energy savings data required for annual evaluations
- Eliminating data requests between evaluators and implementation contractors, thus improving data quality and speeding up evaluation activities

Figure 10 Summary of energyENGINE evolution**Phase 4 (2018-2019):**

During 2018-2019, EEP further enhanced its IT infrastructure and energyENGINE data warehouse, focusing on:

- Data Analytics, Metrics, and Reporting:
 - Support and measure key performance indicators
 - Utilize business intelligence tools for superior data analysis
 - Increase visibility into the rebate pipeline process
 - Leverage predictive analytics for project identification and customer participation
- Data Accessibility: Improve "self-service" methods for data access
- Data Security and Integrity:
 - Migrate to a new cloud server for enhanced functionality and cost-effectiveness
 - Implement new tools and security features

These enhancements ensured that energyENGINE remained the central hub for all energy efficiency data, providing improved analytics, reduced costs, scalability, and functionality.

Future opportunities include leveraging Advanced Meter Infrastructure (AMI) data and using internal resources to calculate gross therm savings.

Phase 5 (2022-2024):

During 2022-2024, EEP undertook a significant transition to enhance control and integration of its core systems. Key initiatives included:

- Vendor Transition:
 - The management of all energyENGINE application processes, development, coding, and enhancements was transitioned from our external vendor to the EEP IT Department. This move aimed to reduce costs, improve agility, control, and responsiveness to evolving business needs.
- Vendor Migration:
 - All energyENGINE components, including application processes, program and participation data, code, and data model, were migrated from the external vendor to physical servers located in Southern Company Gas' data center. This migration enhanced data security, control, and integration with Southern Company Gas' broader IT infrastructure.
- HEER Therm Calculations Automation:

- Implemented automation for Home Energy Efficiency Rebate (HEER) gross therm calculations to streamline and improve the accuracy of rebate processing.
- Smart Thermostat Therm Automation:
 - Developed and integrated automation for smart thermostat gross therm savings calculations, enabling more precise tracking and reporting of energy savings from smart thermostat installations.

These enhancements ensured that the Nicor Gas Energy Efficiency Program remained at the forefront of technological innovation, providing improved process efficiencies, enhanced data security, and more accurate energy savings calculations.

Phase 6 (2026-2029):

EEP remains committed to investing in the necessary infrastructure to support program management, marketing, outreach, project tracking, and reporting. Building upon our existing service management ecosystem, we are poised to incorporate cutting-edge advancements to further enhance our platforms and analytics.

Key Enhancements for the Next Four Years:

Automation	• Implement automated workflows to streamline processes and reduce manual intervention • Utilize robotic process automation (RPA) to handle repetitive tasks, thereby increasing operational efficiency
Artificial Intelligence Modeling	• Develop and integrate AI models to better analyze customer participation data and predict trends • Use machine learning algorithms to optimize energy usage patterns and recommend personalized energy-saving measures to customers
Salesforce Enhancements	• Upgrade our Salesforce platform to improve customer relationship management (CRM) capabilities & enhance customer engagement • Integrate Salesforce with other systems to provide a seamless experience for both internal teams and customers
PUP (Project Upload) File Enhancements & Efficiency	• Enhance project file management systems to ensure better organization, accessibility, and security of documents • Implement version control and collaborative tools to improve project tracking and team efficiency

Marketing Department Collaboration	• Utilize advanced email marketing tools to create more targeted and effective marketing campaigns • Foster collaboration between marketing and sales teams to ensure consistent messaging and improved customer engagement
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6.6 Portfolio Planning

The Nicor Gas Energy Efficiency Program portfolio planning group develops long-term energy efficiency plans that cover the four-year periods approved by the ICC, as well as annual and other short-term plans that adjust for ongoing changes in program costs, performance, and external factors.

Planning activities include:

- Designing programs and business strategies that represent a diverse cross section of opportunities for customers of all rate classes to participate, consistent with the requirements of Section 8-104(f)(5) of the Act.
- Managing the portfolio to meet savings goals including the increased savings targets proposed under Section 8-104(e-20) while maintaining the 2% statutory budget spending defined in the Act.
- Balancing the portfolio to meet additional statutory and stipulated constraints related to public sector spending, income-eligible spending, weighted average measure life, cost effectiveness, and other requirements.
- Evaluating the cost-effectiveness of measures, programs and the entire portfolio, consistent with the definition of the total resource cost framework outlined in Section 8-104(b) of the Act.
- Completing baseline studies and savings potential studies that assess market segmentation, equipment ownership, measure savings, program design strategies, program participation, and program delivery costs.
- Incorporating into the portfolio innovative new technologies and delivery approaches developed through the Emerging Technology program, Market Transformation program, and ongoing continuous improvement efforts.
- Incorporating into the portfolio lessons learned from evaluation activities, including updated saving for energy efficiency measures, as well as improvements to program performance.
- Incorporating into the portfolio lessons learned from customers satisfaction, market assessments, and other customer feedback.
- Providing data and insights that track and improve program performance, including analyses that expand participation from underserved customers, workers, businesses, and communities
- Exploring new and creative innovative approaches to improve customer choice, satisfaction, loyalty, and engagement with energy efficiency programs.
- Managing the energy efficiency portfolio planning process, including developing and maintaining planning tools and databases, managing internal planning communications and reporting, and participating in the statewide planning process.
- Collaboratively working with other Illinois utilities and stakeholders through the Illinois SAG, low-income advisory groups, and other forums.

6.7 Market Development Initiative

In 2023, Nicor Gas successfully developed and launched a Market Development Initiative (MDI) to invest in workforce and business development for underrepresented populations and economically disadvantaged communities. This standalone initiative combined research, development of a market development action plan, and contractor and workforce support to increase the energy efficiency funds delivered directly to these groups, and:

- a) Increased the number of local and diverse participants in all contractual levels of the energy efficiency workforce throughout the Nicor Gas service territory;
- b) Strengthened the partnership and support for local and small business enterprises; and
- c) Increased the transparency of and equity in the Energy Efficiency Procurement process.

Program research was completed in 2022 to better understand and support underrepresented populations and underserved communities to achieve sustainable solutions and leverage the Nicor Gas Energy Efficiency Program to achieve larger community and regional goals. This research informed the development of a Market Development Action Plan (MDAP) that served as a blueprint for the MDI implementation.

Outside of this initiative, Nicor Gas also deployed targeted marketing strategies to increase participation from underrepresented populations and underserved communities in the energy efficiency programs. These targeted marketing efforts are described in Section 6.3 covering Marketing and Outreach.

Program Implementation (2023-2025 Program Years)

Since inception, Nicor Gas has worked with its third-party implementation contractor to service the following activities:

- Identifying/Recruiting Cohort Participants:
 - Identifying underrepresented populations and underserved communities
 - Analyzing the needs of the Nicor Gas portfolio of programs and support functions
 - Developing a matrix of Diverse Business Enterprises (DBE) —including minority owned, women owned, and veteran owned enterprises— currently serving the portfolio, as well as other diverse firms not yet participating and non-profits, community-based organizations and other enterprises serving these communities
 - Developing a matrix of local and DBE trade allies serving the portfolio and these communities.
- Creating Meaningful CBO Partnerships
 - Community-based organizations and non-profits
 - Securing additional resources, wraparound services and grant funds to support cohorts
 - Customers from underrepresented populations and underserved communities
- Defining meaningful metrics for tracking progress
 - Program participation, savings, and incentive spending for underrepresented populations and underserved communities
 - Program participation, savings, and spending flowing through implementation contractors and trade allies from underrepresented populations and underserved communities
- Providing transparent procurement assistance for MDI partners

- Conducting outreach to educate all potential bidders on implementation contracts
- Offering procurement workshops, webinars, seminars, and other educational opportunities
- Structuring procurements that provide sufficient information on technical and performance requirements and time to enable non-traditional bidders to compete effectively for Tier 1 prime contracts and to form effective teams with other firms who sub-contract
- Ensuring that the terms and conditions of procurement processes such as Requests for Proposals and Invitation for Bid are stringent enough to protect the utility's interests, but not so stringent as to disqualify new and/or marginally capitalized businesses, not-for-profits and CBOs from bidding on contracts within their capabilities, thus unnecessarily limiting competition.
- Developing the MDAP
 - Key activities in each area of the initiative
 - Goals and target metrics
 - Initial schedule and milestones for each area of the initiative
 - Initial budget allocations for each area of the initiative
 - Tracking, analysis, and reporting of key metrics

MDI built on the framework developed within the existing Nicor Gas Diverse Business Partnership (DBP) program for diverse suppliers. The DBP platform establishes the process Nicor Gas uses to develop and expand strategic partnerships with diverse businesses. Figure 13 outlines the DBP framework for onboarding and classifying businesses, and then growing engagement from small, transactional contracts to larger strategic partnerships. By leveraging this framework, MDI jumpstarted its ability to create deeper, sustainable engagements with vendors and trade allies, and jumpstarted the development of training and development resources.

Figure 11 DBP Partnership Levels

Described as:	Level 1: Traditional	Level 2: Basic Partnering	Level 3: Full Partnering	Level 4: Alliancing
	<i>Adversarial Arms Length Contractual</i>	<i>Collaborative Team Oriented</i>	<i>Value Added Integrating Team</i>	<i>Synergistic Strategic</i>
Terms of the Agreement	Competition	Cooperation	Collaboration	Coalescence
	- Each side has clearly established responsibilities - Client 'monitors and inspects' contractor - Little or no trust	Each side knows and commits to the goals of the project and to each other's goals – requires a degree of trust	- One integrated team - High degree of trust - Team has one set of goals for a successful project - Life of a project often has a separate organizational entity	- Elements of shared risk also defined - Joint sharing of not only gains, but also liabilities for project failure - Both sides share goals and cost

Implementation Contractor Support

In this component, the MDI will support the development and growth of DBE implementation contractors, as well as implementation contractors that are community based or other nonprofit organizations meeting the needs of underserved communities.

Strategies to support these businesses may include:

- Conducting outreach to identify and educate firms about opportunities in the energy efficiency space, including workshops, webinars, seminars, job boards, purchasing fairs, and other educational opportunities.
- Creating tailored support plans specific to individual contractor needs.
- Partnering with local business incubators, U.S. Small Business Administration, the Illinois Office of Minority Economic Empowerment, DCEO, local governments, colleges, and other utilities that support the creation and development of DBE enterprises.
- Providing training programs that develop the capabilities necessary to create and expand implementation contracting businesses. Training may be provided directly by Nicor Gas or its partners, or, instead, provided through grants for participating in existing trainings from organizations such as the Small Business Administration or the Association of Energy Services Professionals. Training will also be supported through grants for transportation, childcare, lodging, or similar services that overcome participation barriers.
- Providing funding or other support in obtaining necessary certification for technical requirements or business requirements (e.g., minority-owned business certification).
- Providing grants or other support for software, equipment, and other tools needed create and expand implementation contracting services.
- Creating mentorship programs with other contractors to help build the relationships and skills necessary to form effective teams with other firms who sub-contract and to grow the skills required to eventually support larger prime contracts.
- Periodically reviewing procurement requirements, bidding processes, and contract terms to remove barriers to participation in the bidding and awarding of contracts, while still maintaining the interests of Nicor Gas and its customers.

Trade Ally Partner Support

In this component, the MDI has supported and will continue to support the development and growth of DBE trade ally partners, as well as trade allies that are located in or meeting the needs of underserved communities.

Strategies used to support these businesses may include:

- Conducting outreach to identify and educate trade ally firms about opportunities in the energy efficiency space, including workshops, webinars, seminars, and other educational opportunities.
- Creating tailored support plans specific to DBE trade ally needs.
- Partnering with local business incubators, U.S. Small Business Administration, the Illinois Office of Minority Economic Empowerment, DCEO, local governments, and colleges that support the creation and development of DBE businesses.

- Providing training programs that develop the capabilities necessary to create and expand trade ally businesses. Training may be provided directly by Nicor Gas, its partners, or supported through grants for trainings from organizations such as the American Society of Heating, Refrigerating and Air-Conditioning Engineers. Training will also be supported through grants for transportation, childcare, lodging, or similar services that overcome participation barriers.
- Providing funding or other support in obtaining necessary certification for technical requirements (e.g., Building Performance Institute certifications) or business requirements (e.g., minority-owned business certification).
- Providing grants or other support for software, equipment, and other tools needed participate in programs, for example for blower doors or IR cameras needed for energy assessments.
- Creating mentorship programs with other trade ally firms to provide guidance on the qualifications and capabilities necessary to serve energy efficiency markets.
- Periodically reviewing program requirements and rebate application terms to remove barriers to trade ally participation.

Workforce Development

In this component, the MDI will increase the skilled workforce to meet the needs of the Nicor Gas Energy Efficiency Program, including internal staff, implementation contractors, and trade allies, as well as the needs of the broader energy efficiency industry. The MDI team will identify areas that are understaffed or have growth opportunities to ensure that strategies support job placements.

Workforce development strategies may include:

- Conducting outreach to identify workforce needs among implementation contractors, trade allies, utilities, and other firms in the energy efficiency industry.
- Creating tailored support plans specific to key workforce needs.
- Partnering with local unions, job placement agencies, U.S. Small Business Administration, the Illinois Office of Minority Economic Empowerment, DCEO, local governments, and colleges that provide workforce training and placement.
- Providing training programs that develop the capabilities necessary for energy efficiency jobs. Training may be provided directly by Nicor Gas or its partners, such as the Nicor Gas Career Academy and the Construct programs offered in partnership with other utilities. Training may also be provided through grants for trainings from organizations such as local community colleges providing HVAC training. Training will also be supported through grants for transportation, childcare, lodging, remedial skills, interview skills, or similar services that overcome participation barriers.
- Providing funding or other support in obtaining necessary certification for technical requirements.
- Creating mentorship, internship, and apprenticeship programs with utilities, implementation contractors, and trade allies to provide exposure to energy efficiency opportunities and real-world work experience.
- Creating job boards, referrals, and other forums that provide actionable pathways to job placements.

2025 – 2028 College of DuPage Partnership

- In August 2024, College of DuPage (COD) asked Nicor Gas to be the main partner in creating an energy efficiency workforce program, with the goal to start with its first cohort in November 2024 (a pilot program with 20 students).
- Nicor Gas has hosted workforce training & employment programs through its Market Development Initiative (MDI) since 2023 and is able to provide its existing curriculum and resources to launch this program in partnership with COD.
- COD has the same goals as Nicor Gas to reach minority individuals, returning individuals and veterans as part of its program as Nicor Gas has done in the first two years of its MDI programming.
- While a full program with funding provided by Nicor Gas in addition to COD funding will launch in 2025, we are currently working together to launch a **COD-only funded** full-time, six-week pilot program focused on weatherization and energy efficiency concepts with a max of 20 students in November 2024.
- In 2025, Nicor Gas will begin supporting this program financially, as this will be the “new model” for Nicor’s MDI Program – a partner-based program with COD. It will be marketed as a partner program on all materials with the expectation that we both will use our name and brand recognition to recruit applicants and that our team can help students find on-the-job training opportunities if they so wish with approved contractors from our contractor circle network.
- Nicor Gas is partnering with several community-based organizations including WorkNet DuPage and the National Latino Education Institute (NLEI) to recruit applicants to the program and provide other workshops and services to students once the program begins. COD is also partnering Goodwill’s Transition Navigators.
- In total, COD and Nicor Gas plan to enroll 200 students per program year.

Budget

The program budget and savings targets are provided in Table 27 below. Nicor Gas agrees to spend \$1.95 million/year in 2026 and \$3.0 million in 2027 to 2029 on average over the three-year proposed Amended Plan Period. Please note the figures are rounded to thousands.

Table 27 MDI Budgets (in thousands)

Program	2026	2027	2028	2029	Total
MDI	\$1,950	\$3,000	\$3,000	\$3,000	\$10,950

7 Portfolio Design Technical Assumptions

7.1 Cost Effectiveness Modeling

Model Overview

Nicor Gas utilizes a calculator designed by Energy and Environmental Economics (E3) to measure cost-effectiveness of the overall portfolio as well as individual programs and measures. Founded in 1989, E3 advises utilities, regulators, government agencies, power producers, energy technology companies, and investors on a wide range of critical issues in the electricity and natural gas industries. E3 developed the tools and framework for cost-effectiveness assessment of energy efficiency used by several investor-owned and publicly owned utilities in California, New York, Illinois, Pennsylvania, Maryland, and Ontario, Canada.

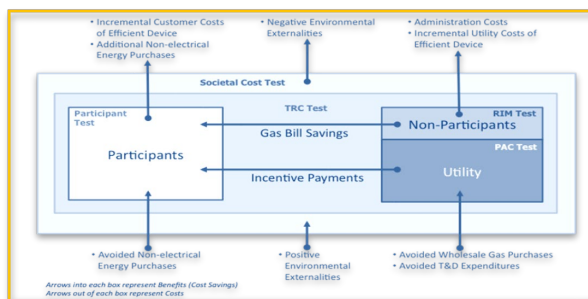
The E3 Calculator estimates savings, spending, and cost-effectiveness for energy efficiency programs and portfolios. Users can rely on default values and assumptions contained in the E3 Calculator to create customized versions that better reflect their programs or service territory. The Nicor Gas Energy Efficiency Program worked with E3 to modify the E3 Calculator for use in Illinois. To calculate cost effectiveness, the Nicor Gas Modified E3 Calculator begins with information about energy efficiency measures, arranges them into programs, and then arranges programs into a portfolio. Within the calculator, users specify measures with data on costs and savings, programs with additional data on participation and administrative budgets, and portfolios with additional data on portfolio administrative budgets. The model then calculates cost effectiveness for individual energy measures and programs, as well as for the total portfolio. The Nicor Gas calculator also organizes E3 outputs in a database structure that allows users to calculate and analyze a number of output metrics at the measure, program, and portfolio level.

Model Outputs

Cost-effectiveness analysis compares the benefits of energy efficiency (mostly from avoided energy costs and avoided pollution costs) against the associated costs (mostly program delivery and measure technology costs) of measures, programs, and portfolios. The E3 Calculator analyzes the cost effectiveness from several different perspectives (the participant, the utility, non-participating ratepayers, and society as a whole). The societal perspective is calculated using the total resource cost (TRC) framework that is consistent with the Illinois TRC test defined in Section 8-104(b) of the Act.

From each perspective, a benefit-cost ratio greater than one implies that the benefits of implementing energy efficiency outweigh the associated costs. A ratio less than one indicates that costs outweigh benefits. The higher the benefit-cost ratio, the greater the cost-effectiveness of the measure, program, or portfolio. The specific tests and perspectives within the E3 Calculator are outlined in Figure 13 and described further below.

Figure 12 Cost Effectiveness Tests in E3



- **Illinois Total Resource Cost Test** – In Illinois, the TRC test measures the benefits and costs of efficiency to society as a whole, based on the total costs to deliver energy efficiency measures and programs, including both participant and utility costs. Costs include participant costs to purchase, install and maintain the more efficient equipment and utility costs to market and administer the programs and portfolio. Any direct installation costs incurred by the utility are also included. Incentives are not counted in addition to the full measure costs incurred by participants, as incentives represent transfers from the utility to the customer to offset some of those installation costs. That is, an incentive increases the utility's cost and decreases the participant's cost by the same amount, with a net effect of zero. Benefits include avoided costs to the utility of procuring and delivering natural gas, avoided participant water costs (for water savings from

measures like of low-flow showerheads), avoided costs of greenhouse gases, and other quantifiable societal benefits.

- Program Administrator Cost Test – Measures the effect of the efficiency measure on the administering utility's revenue requirement. The utility's costs of implementing energy efficiency measures include direct installation costs incurred by the utility, incentives, program administration, and marketing expenses. Benefits include the utility's avoided cost of procuring and delivering natural gas.
- Participant Cost Test – Measures the quantifiable costs and benefits from participating in energy efficiency programs. Participant costs include the purchase and installation of the efficient equipment. Benefits include incentives paid by the utility and participant energy and water utility bill savings.
- Ratepayer Impact Measure Test – Measures the net impact of efficiency programs on natural gas rates. This test compares the utility cost savings to the associated revenue losses. Costs are the same as those for the Program Administrator Cost Test, while benefits include the benefits for the Program Administrator Cost Test plus lost revenue from reduced energy sales.

Model Inputs

The following Table 27 describes the key inputs necessary for the computation of the benefit-cost ratios in the E3 Calculator.

Table 28 Common Inputs to Costs Effectiveness Tests

Input	Purpose
<i>Financial Inputs</i>	
Discount Rate	Since the mechanism for computing and comparing costs and benefits involves using net present value methods, the model requires a discount rate to consistently value dollar outlays in different years.
Retail Energy Rates	These are the natural gas and electricity rates paid by consumers, which are used to determine participant savings.
Utility Gas Supply Costs	The cost of gas paid by the utility to purchase, transmit, and distribute natural gas to customers.
Green House Gas (GHG) Costs	As required by Section 8-104(b) of the Act, natural gas avoided costs include reasonable estimates of the financial costs likely to be imposed by future regulation of emissions of greenhouse gases.
Water Costs	Water costs are estimated to account for direct benefits that accrue to participants for installing water conserving measures.
Other Quantifiable Societal Benefits (OQSB)	As required by Section 8-104(b) of the Act, TRC benefits include other quantifiable societal benefits. Nicor Gas quantified the societal benefits from avoiding non-GHG air emissions.

Input	Purpose
<i>Measure- and Program-Related Inputs</i>	
Measure Useful Life	Defines the number of years that installed efficiency measures provide savings.
Measure Annual Savings	Quantifies the reduction in energy consumption that occurs in each year of the measure's useful life.
Measure Participation	Tracks the number of efficient units installed by program participants. This typically tracks installed devices, but may also track other participation units such as square feet of new construction or linear feet of pipe insulation.
Measure Incremental Costs	Represents the cost difference between an efficient measure and a standard (baseline) measure, including differences in both purchase price and installation cost. Incremental costs for some measures also represent incremental costs (or savings) in ongoing operations costs.
Gas Savings Profile	Adjusts for seasonality of measure savings. Certain measures save gas predominantly in the winter while others apply annually. Gas avoided costs are also adjusted to reflect seasonal variation.
Net-to-Gross Ratio	Represents the fraction of gross energy savings that are attributable to the energy efficiency program. This factor accounts for both free-ridership (customers that would have installed the measures, even in the absence of the program) and spillover (additional savings generated by the program beyond those directly counted through measure participation).
Incentive Costs	Represents the rebates or other financial incentives paid to program participants for each installed measure.
<i>Non-Incentive Costs</i>	
Portfolio Administration and Program Implementation Costs	Tracks non-incentive costs required to deliver the programs and the portfolio, including internal staff salaries, administrative expenses, marketing expenses, vendor costs, information systems, and evaluation.

7.2 Assumptions and Data Sources for E3 Input Files

Discount Rate

Consistent with the Policy Manual, the Nicor Gas Energy Efficiency Program uses a TRC nominal discount rate of 4.33% representing the societal discount rate computed in the IL-TRM².

² See TRM V13, Volume 1, Section 3.11 (page 54 of volume 1).

Avoided Costs

Nicor Gas included in its avoided cost calculations the costs for purchasing natural gas commodity, as well as the costs to transport and deliver commodity to customers. As required by Section 8-104(b), TRC benefits also include the avoided costs of greenhouse gas emissions, as well as other quantifiable societal benefits, which Nicor Gas defines as the avoided costs of non-GHG emissions.

Nicor Gas calculated natural gas commodity prices at Henry Hub, using the nominal dollar forecast in the *U.S. Energy Information Administration Annual Energy Outlook 2023 ("AEO")*, forecast from Table 13. *Natural Gas Supply, Disposition, and Prices*. Nicor Gas added to these the pipeline delivery and gas basis charges required to transport gas from Henry Hub to the Chicago city gate, and the distribution costs required to deliver gas from the city gate to customers. For these adders, Nicor Gas developed nominal dollar forecasts by applying the AEO inflation forecast to actual 2024 values.

For avoided cost for greenhouse gas, Nicor Gas calculated GHG consistent with the *November 2023 Report on the Social Cost of Greenhouse Gases*, developed by U.S. Environmental Protection Agency. Nicor Gas also included other quantifiable societal benefits, based on estimates of health costs from non-GHG air emissions coming from natural gas combustion calculated by the Nicor Gas independent evaluator in February 2021. For both of these adders, Nicor Gas developed nominal dollar forecasts by applying the AEO inflation forecast to the sources' real dollar forecasts.

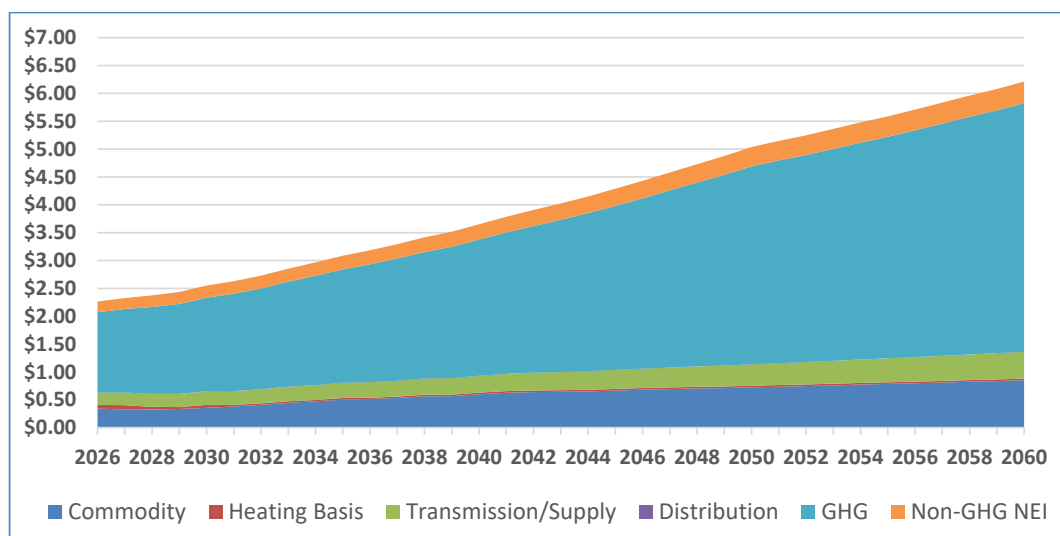
Total avoided costs begin at \$2.197 per therm in 2026, increasing to \$6.184 per therm in 2060. Calculation of the 2026 avoided costs is shown in Table 29.

Table 29 Calculation of 2026 Avoided Costs

Avoided Cost Component	Cost (\$/Therm)
Natural Gas Commodity Price Forecast @ Henry Hub	\$0.341
Pipeline Delivery and Gas Supply Basis	\$0.223
Distribution Costs	\$0.00014
Total Utility Avoided	\$0.564
Avoided Greenhouse Gases	\$1.440
Other Quantifiable Societal Benefits	\$0.192
Total Societal Avoided Costs	\$2.197

The gas commodity price forecast extends to the year 2050. However, because the EEP includes measures with lifetimes longer than 25 years (such as the Residential New Construction program), these forecasts are extended to 2060 using a trend analysis. The avoided cost forecast through 2060 is shown in Figure 14.

Figure 13 Nicor Gas Avoided Cost Forecast (Nominal \$/Therm)



Water Benefits

Several measures included in the Nicor Gas Energy Efficiency Program such as aerators and low flow showerheads, save water in addition to natural gas. To account for economic benefits associated with these water savings, Nicor Gas constructed an index of municipal water rates for the 22 largest municipalities in the service territory. In the Nicor Gas service territory the cost of water for participants is \$7.13 per 1,000 gallons in 2024, using a weighted average by population. Throughout the period of the forecast, the water rate index is inflated at 4.45% per year based on historic inflation for water utility prices tracked by the U.S. Department of Labor.

Gas Savings Profiles

Gas usage varies with the time of year and type of equipment. Nicor Gas defined two gas savings profiles to represent these different usage patterns. A “winter only” profile applied to measures affecting space heating equipment and an “annual” profile applied to all other measures.

Seasonal Commodity Prices

Seasonal commodity prices were developed to match avoided costs to the gas savings profiles developed for heating and non-heating measures. Winter price premiums were calculated using monthly commodity price forecasts from the *U.S. Energy Information Administration Annual Energy Outlook 2023, forecast from Table 13. Natural Gas Supply, Disposition, and Prices*, and weighting winter prices by heating degree days for the Nicor Gas service territory. Winter price premiums ranged from \$0.067 per therm in 2026 to \$0.029 per therm in 2060.

Technical Assumptions

Technical assumptions include the inputs specified at the measure, program, and portfolio level required to calculate the costs and benefits of the Nicor Gas Energy Efficiency Program.

Measure inputs include the incremental costs participants incur to install efficient equipment relative to baseline alternatives, rebates and other financial incentives provided by Nicor Gas, incremental savings

relative to baseline alternatives, water savings for certain measures, and equipment lifetimes. In addition, participation and NTG ratios are applied to each individual measure.

Nicor Gas used a variety of sources to calculate measure inputs. The algorithms and assumptions included in the January 1, 2026, version of the Illinois TRM, version 14, were used to calculate energy and water savings for measures covered by the TRM. For other measures, results of Nicor Gas' most recent applicable independent EM&V evaluation results were applied when available, and, if needed, data from other utilities and implementation contractors were also used.

In general, incremental costs and equipment lifetimes were also calculated using TRM assumptions and algorithms. Nicor Gas also used data mining and analysis of historic measure costs data, including contractor invoices and customer-reported project costs, to calculate incremental costs for a number of measures. Appendix A lists all the measure inputs used in the analysis.

Program inputs include the participation inputs that drive measure costs and savings, some program costs for marketing and administration, and NTG ratios. Participation inputs were developed from Nicor Gas program experience to date, benchmarking from other like programs, the 2023-2024 Illinois Baseline & Potential Study prepared for the Joint Utilities (Commonwealth Edison, Ameren Illinois, and Nicor Gas) dated December 13, 2024, and feedback from SAG members. Participation was also adjusted to meet the budget limits set by Section 8-104(e-20) of the Act and the planning objectives outlined in Section 1.10.

Program costs were developed based on Nicor Gas program experience, modeling and analysis of historic program data, comparison to national and regional benchmarks, and feedback from SAG members.

Portfolio inputs include additional costs for portfolio functions, including portfolio management, marketing, emerging technology, market transformation, evaluation, and market development initiative. Portfolio costs were developed based on Nicor Gas experience to date, comparison to national and regional benchmarks, and feedback from SAG members. Portfolio costs are provided in Chapter 1.

Measure Incentive Costs

The Nicor Gas Energy Efficiency Program developed measure-level incentives based on a review of incremental measure costs, budget availability, historic program experience, the Illinois Baseline & Potential Study prepared for the Joint Utilities (Commonwealth Edison, Ameren Illinois, and Nicor Gas) dated December 13, 2024, other local and national benchmarks, and feedback from SAG members. The EEP believes that these incentive levels are properly designed to stimulate the market to reach the EEP planning objectives. However, should participation lag or dramatically exceed expectations, the Nicor Gas Energy Efficiency Program may modify incentive levels during the four-year period to achieve desired outcomes, all while managing portfolio constraints budgets, Stipulation agreements, and cost effectiveness.

Retail Rates

Retail rates included in the model are the blended forecast of Nicor Gas rates for each customer class, including residential, small business and large business.

Net-to-Gross Ratios

NTG ratios reflect the most recent 2026 NTG results from the independent evaluator and the SAG NTG Policy as applied prospectively for 2027.

7.3 Cost Effectiveness Results

The Nicor Gas Energy Efficiency Program, with a portfolio benefit-cost ratio of 4.17, achieves the requirements of Section 8-104 that Nicor Gas demonstrate “that its overall portfolio of energy efficiency measures, not including low-income programs..., are cost-effective using the total resource cost test and represent a diverse cross section of opportunities for customers of all rate classes to participate in the programs”.

Table 29 provides cost-effectiveness results for each program in the portfolio. Appendix A provides cost-effectiveness results for each measure in the portfolio. In Table 30, both the TRC and PAC results are presented, along with results of a sensitivity analysis excluding other quantifiable societal benefits. Table 29 also shows portfolio results for the entire portfolio, as well as results excluding IE programs.

Table 30 Program TRC and PAC Results

Programs	Benefit-Cost Ratio			
	TRC	TRC excluding OQB*	PAC	PAC excluding OQB*
<u>Residential</u>	5.39	4.92	1.70	1.70
Education and Outreach	6.49	5.98	3.51	3.51
HEER	3.96	3.47	0.84	0.84
HES	3.70	3.41	0.87	0.87
MF	7.06	6.58	1.25	1.25
SNB	5.11	4.71	2.25	2.25
<u>Income Eligible</u>	2.12	1.97	0.43	0.43
IE Weatherization	1.37	1.26	0.30	0.30
IE HA	1.99	1.84	0.41	0.41
IE PHA	0.85	0.79	0.19	0.19
IE ESK	1.86	1.71	0.38	0.38
IE AHNC	13.77	12.84	2.36	2.36
IE Moderate	1.18	1.09	0.23	0.23
<u>Business</u>	7.09	6.73	2.31	2.31
SEM	10.57	9.71	2.69	2.69
SB	2.40	2.21	1.03	1.03
BEER	5.41	5.50	2.22	2.22
Custom	6.81	6.26	1.91	1.91
CINC	11.25	10.29	2.62	2.62
Portfolio	4.17	3.90	1.09	1.09
Portfolio Excluding Income Eligible	4.91	4.59	1.40	1.40

*OQB = Other Quantifiable Benefits

8 Conclusion

The Nicor Gas Energy Efficiency team is excited to implement the proposed Amended EEP portfolio, which will yield cost-effective benefits for our customers. The portfolio will generate significant economic impact in the community, create and support jobs, reduce greenhouse gases, provide all customers with opportunities to participate, and help transform energy usage. It includes the Market Development Initiative that will focus efforts in many communities that have historically been left behind, creating new opportunities and partnerships into the future.

With the experienced team of Nicor Gas Energy Efficiency Program staff, Nicor Gas expects a seamless transition as we execute the proposed Amended EEP portfolio. Our success will continue to rely on communication and partnership with stakeholders, implementation contractors, trade allies and independent evaluators. Most critical to success will be our continued focus on customer needs, providing simple, clear pathways for them to engage and take action. Working collaboratively, the Nicor Gas Energy Efficiency Program will continue to lead the way for years to come.

Appendix A – Measure List

The measures offered by the Nicor Gas Energy Efficiency Program are included in the accompanying attached Appendix A EEP Measures.

Measures (2018-2019)													Measures (2020-2021)												
Measure #	Program	Program Component	Measures	TRM Volume	Units	Incremental Cost	Measure Inputs				Measure Life	ASDC Measure Allocation	2017 to 2020 ASDC Incentives	2017 to 2020 Total Incentives	Total 2020-2021 Incentives	First Year Incentive	Measure Savings (2020-2021)			Annual Savings	Annual dollars saved	Total Participation	TRC	PAC	
							Direct Material Labor	Direct Install Materials	Other Inputs	Net to Gross Ratio							LEICache	LEICache	Annual LEICache						
1	BEER	BEER BOP	Boiler Tune Up, Process	4.4.3	Project	\$5,309	\$5,309	\$0	0	0%	15.0	0%	\$49,072	\$49,072	\$60,800	\$18,728	136,358	0	118	7.1	1.7				
2	BEER	BEER BOP	Boiler Tune Up, 1000 MMBtu	4.4.3	Project	\$6,577	\$6,577	\$0	0	0%	2.0	0%	\$57,842	\$57,842	\$875,256	\$818,414	1,760,244	0	1,187	4.0	1.5				
3	BEER	BEER BOP	Customize	4.4.3	Project	\$6,577	\$6,577	\$0	0	0%	2.0	0%	\$57,842	\$57,842	\$875,256	\$818,414	1,760,244	0	1,187	4.0	1.5				
4	BEER	BEER BOP	Small Pipe Insulation, 42", Indoor BSW	4.4.24	LNFT	\$4	15	15	0	0%	15.0	100%	\$14,669	\$14,669	\$120,004	1,054	27,664	0	24,033	1.9	0.6				
5	BEER	BEER BOP	Pipe Insulation, 42", Indoor BSW	4.4.24	LNFT	\$4	15	15	0	0%	15.0	100%	\$46,903	\$46,903	\$374,400	3,244	81,334	0	8,637	1.1	0.7				
6	BEER	BEER BOP	Pipe Insulation, 36", Indoor Space Heat	4.4.24	LNFT	\$4	15	15	0	0%	15.0	100%	\$12,971	\$12,971	\$105,312	921	23,112	0	21,191	1.1	0.4				
Customized TRM																									
7	BEER	BEER BOP	Pipe Insulation, Dry Cleaner	4.4.14	LNFT	\$4	50	50	0	0%	15.0	100%	\$4,305	\$4,305	\$5,077	4,205	68,044	0	193	34.2	15.0				
8	BEER	BEER BOP	Pipe Insulation, Indoor HPS Process Heat	4.4.14	LNFT	\$14	25	25	0	0%	15.0	100%	\$29,813	\$29,813	\$386,796	3,355	83,796	0	8,926	4.1	1.6				
9	BEER	BEER BOP	Pipe Insulation, Indoor HPS Process Heat	4.4.14	LNFT	\$4	50	50	0	0%	15.0	100%	\$4,248	\$4,248	\$5,022	4,070	66,056	0	685	34.4	11.6				
10	BEER	BEER BOP	Pipe Insulation, Indoor HPS Space Heat	4.4.14	LNFT	\$4	50	50	0	0%	15.0	100%	\$4,248	\$4,248	\$5,022	4,070	66,056	0	685	34.7	10.0				
11	BEER	BEER BOP	Pipe Insulation, Indoor HPS Space Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$20,351	\$20,351	\$264,827	6,507	97,604	0	4,301	4.1	1.8				
12	BEER	BEER BOP	Pipe Insulation, Indoor CPS Process Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$20,351	\$20,351	\$264,827	6,507	97,604	0	4,301	4.1	1.8				
13	BEER	BEER BOP	Pipe Insulation, Indoor CPS Space Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$20,351	\$20,351	\$264,827	6,507	97,604	0	4,301	4.1	1.8				
14	BEER	BEER BOP	Pipe Insulation, Indoor MPS Process Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$17,747	\$17,747	\$241,889	3,749	59,451	0	1,663	18.2	8.0				
15	BEER	BEER BOP	Pipe Insulation, Indoor MPS Space Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$17,747	\$17,747	\$241,889	3,749	59,451	0	1,663	18.2	11.5				
16	BEER	BEER BOP	Pipe Insulation, Outdoor CPS	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$17,747	\$17,747	\$241,889	3,749	59,451	0	1,663	18.2	8.0				
17	BEER	BEER BOP	Pipe Insulation, Outdoor HPS Process Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$17,747	\$17,747	\$241,889	3,749	59,451	0	1,663	18.2	11.5				
18	BEER	BEER BOP	Pipe Insulation, Outdoor HPS Space Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$17,747	\$17,747	\$241,889	3,749	59,451	0	1,663	18.2	11.5				
19	BEER	BEER BOP	Pipe Insulation, Outdoor LPS Process Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$17,747	\$17,747	\$241,889	3,749	59,451	0	1,663	18.2	11.5				
20	BEER	BEER BOP	Pipe Insulation, Outdoor LPS Space Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$17,747	\$17,747	\$241,889	3,749	59,451	0	1,663	18.2	11.5				
21	BEER	BEER BOP	Pipe Insulation, Outdoor MPS Process Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$17,747	\$17,747	\$241,889	3,749	59,451	0	1,663	18.2	11.5				
22	BEER	BEER BOP	Pipe Insulation, Outdoor MPS Space Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$17,747	\$17,747	\$241,889	3,749	59,451	0	1,663	18.2	11.5				
23	BEER	BEER BOP	Pipe Insulation, Outdoor CPS Process Heat	4.4.14	LNFT	\$14	50	50	0	0%	15.0	100%	\$17,747	\$17,747	\$241,889	3,749	59,451	0	1,663	18.2	11.5				
24	BEER	BEER BOP	Steam Trap, Commercial	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
25	BEER	BEER BOP	Steam Trap, Dry Cleaner	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
26	BEER	BEER BOP	Steam Trap, Industrial 1/2" to 3" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
27	BEER	BEER BOP	Steam Trap, Industrial MPS 3/4" to 1" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
28	BEER	BEER BOP	Steam Trap, Industrial MPS 1 1/4" to 2" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
29	BEER	BEER BOP	Steam Trap, Industrial MPS 2 1/2" to 3" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
30	BEER	BEER BOP	Steam Trap, Industrial MPS 3" to 4" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
31	BEER	BEER BOP	Steam Trap, Industrial MPS 4" to 6" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
32	BEER	BEER BOP	Steam Trap, Industrial MPS 6" to 8" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
33	BEER	BEER BOP	Steam Trap, Industrial MPS 8" to 10" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
34	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 1/2" to 1" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
35	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 1 1/4" to 2" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
36	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 2 1/2" to 3" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
37	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 3" to 4" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
38	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 4" to 6" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
39	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 6" to 8" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
40	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 8" to 10" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
41	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 10" to 12" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
42	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 12" to 15" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
43	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 15" to 20" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
44	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 20" to 24" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
45	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 24" to 30" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
46	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 30" to 36" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
47	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 36" to 42" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
48	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 42" to 48" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
49	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 48" to 54" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
50	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 54" to 60" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
51	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 60" to 66" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
52	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 66" to 72" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
53	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 72" to 78" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
54	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 78" to 84" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
55	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 84" to 90" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
56	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 90" to 96" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$11,396	12,796	76,538	109	42,404	64	18.2	3.6			
57	BEER	BEER BOP	Verifort Steam Trap, Industrial HP 96" to 102" pipe	4.4.16	Unit	\$188	\$188	\$0	0	0%	9.0	6.0	\$9,374	\$9,374	\$										

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Measure #	Program	Program Component	Measures	Measure Inputs										Measure Savings (2026-2029)										Measure Cost Effectiveness (2026-2029)			
				TRM Volume	Units	Incremental Cost	Incentive	Direct Install Labor	Direct Install Materials	Other Rebate	Net to Gross Ratio	Measure Life	ASBC Measure Allocation	2027 to 2029 ASBC Incentives	2027 to 2029 TRM Incentives	Total 2026-2029 Incentives	First Year Therms	Lifetime Annual kWh	Annual gallons water	Total Project	TRC	PAC					
106	BEER	BEER Private	Pipe Insulation, Outdoor LPS Space Heat	4.4.14	LN FT	\$21	\$12	\$0	\$0	\$0	83%	15.0	100%	\$0	\$0	\$0	\$14,025	0	0	1,032	66.8	23.2	1,032	66.8	23.2		
107	BEER	BEER Private	Pipe Insulation, Outdoor MPS Process Heat	4.4.14	LN FT	\$21	\$14	\$0	\$0	\$0	83%	15.0	100%	\$0	\$0	\$0	\$18,075	0	0	178	13.5	46.8	178	13.5	46.8		
108	BEER	BEER Private	Pipe Insulation, Outdoor MPS Space Heat	4.4.14	LN FT	\$21	\$14	\$0	\$0	\$0	83%	15.0	100%	\$10,647	\$10,647	\$12,130	41,937	639,054	0	0	308	85.3	29.5	308	85.3	29.5	
109	BEER	BEER Private	Pre-Rinse Sprayer Valves	4.2.11	Unit	\$104	\$104	\$0	\$0	\$0	83%	5.0	0%	\$0	\$2,857	\$3,367	1,417	7,884	0	159,416	39	8.5	1.2	39	8.5	1.2	
110	BEER	BEER Private	Programmable Thermostat - Commercial	4.4.48	Unit	\$75	\$42	\$0	\$0	\$0	83%	11.0	100%	\$3,472	\$3,472	\$4,012	15,104	166,139	0	0	100	60.9	22.9	100	60.9	22.9	
111	BEER	BEER Private	Small Pipe Insulation, 1/2", Indoor DWH	4.4.24	LN FT	\$4	\$3	\$0	\$0	\$0	83%	15.0	100%	\$402	\$402	\$468	35	529	0	0	183	1.9	0.6	183	1.9	0.6	
112	BEER	BEER Private	Small Pipe Insulation, 1/2", Indoor Space Heat	4.4.24	LN FT	\$4	\$3	\$0	\$0	\$0	83%	15.0	100%	\$338	\$338	\$394	15	251	0	0	156	1.5	0.3	156	1.5	0.3	
113	BEER	BEER Private	Small Pipe Insulation, 3/4", Indoor DWH	4.4.24	LN FT	\$4	\$3	\$0	\$0	\$0	83%	15.0	100%	\$476	\$476	\$556	52	779	0	0	222	2.1	0.7	222	2.1	0.7	
114	BEER	BEER Private	Small Pipe Insulation, 3/4", Indoor Space Heat	4.4.24	LN FT	\$4	\$3	\$0	\$0	\$0	83%	15.0	100%	\$506	\$506	\$574	55	842	0	0	250	1.5	0.4	250	1.5	0.4	
115	BEER	BEER Private	Boiler Chemical Descaling	4.4.4	Project	\$2,024	\$460	\$0	\$0	\$0	83%	14.0	100%	\$4,197	\$4,197	\$4,947	9,705	39,598	0	0	11	28.5	6.2	11	28.5	6.2	
116	BEER	BEER Private	Boiler Chemical Descaling	4.4.49	Project	\$1,843	\$1,843	\$0	\$0	\$0	83%	2.0	0%	\$0	\$3,615	\$3,615	11,725	21,485	0	0	22	1.6	0.4	22	1.6	0.4	
117	BEER	BEER Private	Condensing Boilers, >200 <300 MBH	4.4.10	Unit	\$3,383	\$778	\$0	\$0	\$0	83%	14.5	0%	\$0	\$3,667	\$32,447	3,246	53,466	83%	0	17	2.4	2.1	17	2.4	2.1	
118	BEER	BEER Private	Condensing Boilers, 200K 300-499 MBH	4.4.10	Unit	\$4,154	\$2,194	\$0	\$0	\$0	83%	14.5	0%	\$0	\$4,603	\$46,031	8,075	133,576	0	0	22	3.6	1.4	22	3.6	1.4	
119	BEER	BEER Private	Condensing Boilers, >500 500-999 MBH	4.4.10	Unit	\$6,115	\$1,551	\$0	\$0	\$0	83%	14.5	0%	\$0	\$6,631	\$73,851	13,468	213,379	0	0	31	4.1	1.4	31	4.1	1.4	
120	BEER	BEER Private	Condensing Boilers, >1000 1000-1700 MBH	4.4.10	Unit	\$9,413	\$6,495	\$0	\$0	\$0	83%	14.5	0%	\$0	\$10,074	\$173,776	31,835	535,824	0	0	38	5.1	1.5	38	5.1	1.5	
121	BEER	BEER Private	Condensing Boilers, 200K 1701-2500 MBH	4.4.10	Unit	\$12,145	\$9,395	\$0	\$0	\$0	83%	14.5	0%	\$0	\$12,849	\$150,949	30,012	495,225	0	0	17	6.2	1.6	17	6.2	1.6	
122	BEER	BEER Private	Condensing Unit Heaters, >50 <300 MBH	4.4.5	Unit	\$2,028	\$612	\$0	\$0	\$0	83%	12.0	0%	\$0	\$2,181	\$6,331	7,455	29,483	83%	0	11	2.4	2.3	11	2.4	2.3	
123	BEER	BEER Private	Direct Fired Space Heater < 800 MBH	Customized TRM	4.4.39	Unit	\$1,476	\$146	\$0	\$0	\$0	83%	15.0	0%	\$0	\$7,499	\$8,249	26,759	431,996	0	0	17	20.2	26.0	17	20.2	26.0
124	BEER	BEER Private	Direct Fired Space Heater 800-1600 MBH	Customized TRM	4.4.39	Unit	\$1,942	\$879	\$0	\$0	\$0	83%	15.0	0%	\$0	\$4,009	\$4,509	14,358	215,375	0	0	6	17.7	24.3	6	17.7	24.3
125	BEER	BEER Private	Direct Fired Space Heater > 1600 MBH	Customized TRM	4.4.39	Unit	\$13,170	\$1,618	\$0	\$0	\$0	83%	15.0	0%	\$0	\$14,736	\$16,236	50,518	892,773	0	0	11	16.3	27.2	11	16.3	27.2
126	BEER	BEER Private	Furnace, >2% AFUE	4.4.11	Unit	\$546	\$546	\$0	\$0	\$0	83%	14.5	0%	\$0	\$7,469	\$8,649	6,411	2,369	0	0	17	16.7	3.3	17	16.7	3.3	
127	BEER	BEER Private	Furnace, >95% AFUE	4.4.11	Unit	\$752	\$752	\$0	\$0	\$0	83%	14.5	0%	\$0	\$1,974	\$20,376	72,903	61,966	137,043	0	0	284	15.2	10	284	15.2	10
128	BEER	BEER Private	Non-Condensing Boilers, <85K <300 MBH	4.4.10	Unit	\$1,476	\$356	\$0	\$0	\$0	83%	14.5	0%	\$0	\$3,587	\$2,907	1472	2,418	0	0	6	0.8	0.4	6	0.8	0.4	
129	BEER	BEER Private	Non-Condensing Boilers, 85K 300-499 MBH	4.4.10	Unit	\$1,826	\$356	\$0	\$0	\$0	83%	14.5	0%	\$0	\$2,507	\$6,307	3,588	5,589	0	0	6	1.0	0.4	6	1.0	0.4	
130	BEER	BEER Private	Non-Condensing Boilers, 500K 500-999 MBH	4.4.10	Unit	\$1,978	\$1,515	\$0	\$0	\$0	83%	14.5	0%	\$0	\$7,289	\$8,339	3,607	10,023	0	0	6	2.3	0.6	6	2.3	0.6	
131	BEER	BEER Private	Non-Condensing Boilers, <85K 1000-1700 MBH	4.4.10	Unit	\$2,576	\$2,149	\$0	\$0	\$0	83%	14.5	0%	\$0	\$9,893	\$11,524	1,145	18,885	0	0	6	3.4	0.8	6	3.4	0.8	
132	BEER	BEER Private	Non-Condensing Boilers, 85K 1701-2500 MBH	4.4.10	Unit	\$3,625	\$2,468	\$0	\$0	\$0	83%	14.5	0%	\$0	\$16,639	\$18,639	1,622	26,729	0	0	6	4.5	0.8	6	4.5	0.8	
133	BEER	BEER Private	Infrared Heaters	4.4.12	Unit	\$866	\$866	\$0	\$0	\$0	83%	15.0	0%	\$0	\$99,403	\$115,243	32,456	486,252	0	0	139	11.0	2.2	139	11.0	2.2	
134	BEER	BEER Private	Storage Water Heater, <6.7 FT	4.3.1	Unit	\$446	\$0	\$0	\$0	\$0	83%	15.0	0%	\$0	\$1,134	\$1,786	3,235	48,527	0	0	11	13.3	3.2	11	13.3	3.2	
135	BEER	BEER Private	Storage Water Heater, >6.7 FT	4.3.1	Unit	\$979	\$174	\$0	\$0	\$0	83%	15.0	0%	\$0	\$1,134	\$1,786	3,235	48,527	0	0	11	13.3	3.2	11	13.3	3.2	
136	BEER	BEER Private	Steam Trap w/ Survey, Commercial	4.4.16	Unit	\$133	\$133	\$0	\$0	\$0	83%	6.0	100%	\$157,148	\$157,148	\$190,148	288,048	1,728,499	2,471	961,072	1,609	24.8	5.4	1,609	24.8	5.4	
137	BEER	BEER Private	Steam Trap, Commercial	4.4.16	Unit	\$133	\$61	\$0	\$0	\$0	83%	6.0	100%	\$157,148	\$157,148	\$190,148	288,048	1,728,499	2,471	961,072	1,609	24.8	5.4	1,609	24.8	5.4	
138	BEER	BEER Private	Steam Trap, Induct MP 15-30 psig	4.4.16	Unit	\$369	\$369	\$0	\$0	\$0	83%	6.0	100%	\$156,002	\$156,002	\$188,765	344,414	2,086,486	5,835	2,269,417	1,532	30.3	6.6	1,532	30.3	6.6	
139	BEER	BEER Private	Steam Trap, Induct MP 30-75 psig	4.4.16	Unit	\$369	\$369	\$0	\$0	\$0	83%	6.0	100%	\$60,002	\$60,002	\$72,602	481,469	2,889,562	6,085	2,144,508	205	21.2	2.8	205	21.2	2.8	
140	BEER	BEER Private	Steam Trap, Induct MP 75-125 psig	4.4.16	Unit	\$14,484	\$14,484	\$0	\$0	\$0	83%	6.0	100%	\$118,484	\$118,484	\$1,741,118	10,467	38,969	28,969	11,397,794	401	208.1	4.1	401	208.1	4.1	
141	BEER	BEER Private	Steam Trap, Induct MP 125-175 psig	4.4.16	Unit	\$36,968	\$36,968	\$0	\$0	\$0	83%	6.0	100%	\$135,968	\$135,968	\$435,948	763,705	4,382,213	12,619	4,908,118	233	291.3	6.0	233	291.3	6.0	
142	BEER	BEER Private	Steam Trap, Induct MP 175-250 psig	4.4.16	Unit	\$13,528	\$13,528	\$0	\$0	\$0	83%	6.0	100%	\$135,968	\$135,968	\$1,741,118	10,467	38,969	28,969	11,397,794	401	208.1	4.1	401	208.1	4.1	
143	BEER	BEER Private	Steam Trap, Induct MP 250 psig	4.4.16	Unit	\$418	\$369	\$0	\$0	\$0	83%	6.0	100%	\$6,578	\$6,578	\$10,578	314,698	1,888,188	5,191	2,019,071	29	444.7	108.9	29	444.7	108.9	
144	BEER	BEER Private	Storage Door Hinge	4.8.2	Unit	\$1,819	\$1,819	\$0	\$0	\$0	83%	20.0	100%	\$28,459	\$28,459	\$33,239	10,214	204,676	0	0	267	10.8	3.0	267	10.8	3.0	
145	BEER	BEER Private	Door Door Seal	4.8.2	Unit	\$1,819	\$1,819	\$0	\$0	\$0	83%	20.0	100%	\$31,459	\$31,459	\$37,459	15,768	316,999	0	0	333	1.1	3.3	333	1.1	3.3	
146	BEER	BEER Private	Fanless WH w/ >200 MBH	4.3.1	Unit	\$9,251	\$1,271	\$0	\$0	\$0	83%	20.0	0%	\$0	\$113,739	\$132,139	17,616	352,318	0	0	128	4.8	1.0	128	4.8	1.0	
147	BEER	BEER Private	Laminar Flow	4.3.2	Unit	\$16	\$0	\$16	\$4	\$0	83%	10.0	0%	\$0	\$6,562	\$74,066	86,364	862,637	0	13,641,993	3,042	52.8	6.3	3,042	52.8	6.3	
148	BEER	BEER Private	Pool Aerator - Bath - DI	4.3.2	Project	\$14	\$5	\$19	\$1	\$0	83%	10.0	0%	\$0	\$9,863	\$14,943	12,823	128,296	0	2,389,525	2,613	14.5	1.6	2,613	14.5	1.6	
150	BEER	BEER Private	Pool Aerator - Kitchen - DI	4.3.2	Project	\$14	\$5	\$19	\$1	\$0	83%	10.0	0%	\$0	\$9,863	\$14,943	12,823	128,296	0	2,389,525	2,613	14.5	1.6	2,613	14.5	1.6	
151	BEER	BEER Private	Low Flow Shower Heads - DI	4.3.3	Project	\$48	\$0	\$48	\$5	\$0	83%	10.0	0%	\$0	\$6,388	\$9,548	7,885	73,882	0	961,813	411	16.9	2.1	411	16.9	2.1	
152																											

Measure #	Program	Program Component	Measures	TRM Volume	Units	Incremental Cost	Incentive	Measure Inputs			Other Ratios	Net to Gross Ratio	Measure Life	ASBC Measure Allocation	2017 to 2019 ASBC Incentives	2017 to 2019 Total Incentives	Total 2018-2019 Incentives	First Year Therms	Measure Savings (2018-2019)		Annual gallons water	Measure Cost Effectiveness (2018-2019)					
								Direct Install Labor	Direct Install Materials	Other Ratios									Lifetime Therms	Annual kWh		Total Participation	TRC	PAC			
208	BEER	BEER Public	Storage Water Heater - HEAT N	4.3.1	Unit	\$879	\$133	\$0	\$0	\$0	\$0	83%	15.0	0%	\$0	\$1,805	\$1,936	2,005	30,805	0	7	13.4	7.1				
209	BEER	BEER Public	Steam Trap, Commercial	4.4.10	Unit	\$252	\$20	\$0	\$0	\$0	\$0	83%	4.0	0%	\$28,211	\$66,213	\$41,948	39,411	237,648	846	134,641	221	1.8	1.2			
210	BEER	BEER Public	Steam Trap, Commercial	4.4.10	Unit	\$113	\$111	\$0	\$0	\$0	\$0	83%	6.0	0%	\$4,376	\$4,376	\$4,403	7,404	44,423	43	23.3	1.1	1.1				
211	BEER	BEER Public	Steam Trap, Induct HP 15-30 psig	4.4.10	Unit	\$499	\$499	\$0	\$0	\$0	\$0	83%	6.0	100%	\$7,534	\$7,534	\$8,745	12,038	72,227	288	80,814	19	22.4	4.8			
212	BEER	BEER Public	Steam Trap, Induct HP 15-30 psig	4.4.10	Unit	\$499	\$499	\$0	\$0	\$0	\$0	83%	6.0	100%	\$1,072	\$1,072	\$1,143	9,227	18,861	166	14,697	4	18.6	1.4			
213	BEER	BEER Public	Steam Trap, Induct HP 75-125 psig	4.4.10	Unit	\$499	\$499	\$0	\$0	\$0	\$0	83%	6.0	100%	\$2,508	\$2,508	\$2,915	27,446	186,878	467	181,658	6	154.9	33.4			
214	BEER	BEER Public	Steam Trap, Induct HP 125-175 psig	4.4.10	Unit	\$499	\$499	\$0	\$0	\$0	\$0	83%	6.0	100%	\$3,244	\$3,244	\$3,680	33,408	308,490	885	296,509	8	225.0	48.5			
215	BEER	BEER Public	Steam Trap, Induct HP 175-250 psig	4.4.10	Unit	\$499	\$499	\$0	\$0	\$0	\$0	83%	6.0	100%	\$3,834	\$3,834	\$4,384	39,173	359,277	235	113,508	2	295.1	63.2			
216	BEER	BEER Public	Steam Trap, Induct HP 250 psig	4.4.10	Unit	\$500	\$500	\$0	\$0	\$0	\$0	83%	6.0	100%	\$887	\$887	\$973	22,243	133,637	374	145,366	2	376.7	80.7			
217	BEER	BEER Public	Steam Door Hinge	4.8.2	Unit	\$348	\$348	\$0	\$0	\$0	\$0	83%	20.0	0%	\$5,837	\$15,821	\$21,306	476	9,551	12	100.2	1.2	1.2				
218	BEER	BEER Public	Stock Door Seals	4.8.2	Unit	\$5,020	\$181	\$0	\$0	\$0	\$0	83%	15.0	100%	\$5,829	\$13,829	\$24,935	1,463	21,852	0	12	1.2	2.8	1.2			
219	BEER	BEER Public	Tankless WH <200MBH	4.3.1	Unit	\$3,255	\$893	\$0	\$0	\$0	\$0	83%	20.0	0%	\$0	\$5,805	\$6,257	69	1,386	0	10	0.2	0.1	0.1			
220	BEER	BEER Public	Commercial Weather Stripping 3H OI	4.3.3	LN FT	\$31	\$0	\$29	\$18	\$0	\$0	83%	10.0	100%	\$125	\$125	\$146	38	285	946	9	5.3	1.1	1.1			
221	BEER	BEER Public	Laminar Flow	4.3.3	Project	\$18	\$66	\$22	\$5	\$0	\$0	83%	10.0	0%	\$0	\$520	\$605	528	5,279	0	82,442	24	39.0	4.6	4.6		
222	BEER	BEER Public	Faucet Aerator - Bath - OI	4.3.2	Project	\$16	\$0	\$23	\$1	\$0	\$0	83%	10.0	0%	\$0	\$18,377	\$21,515	4,736	47,733	0	679,125	104	10.7	1.2	1.2		
223	BEER	BEER Public	Faucet Aerator - Kitchen - OI	4.3.2	Project	\$16	\$0	\$23	\$1	\$0	\$0	83%	10.0	0%	\$0	\$18	\$207	245	2,444	0	37,343	41	11.9	1.4	1.4		
224	BEER	BEER Public	Low Flow Shower Heads - OI	4.3.3	Project	\$46	\$5	\$60	\$7	\$0	\$0	83%	10.0	0%	\$0	\$4,717	\$5,506	1,578	15,781	0	202,830	88	11.8	1.5	1.5		
225	BEER	BEER Public	Mid Business - Drop in OI	Custom	Unit	\$2,626	\$2,626	\$0	\$0	\$0	\$0	83%	0.0	0%	\$92,097	\$105,196	\$118,081	0	0	0	84	0.0	0.0	0.0	0.0		
226	BEER	BEER Public	Mid Business - Drop in	Custom	Unit	\$701	\$701	\$0	\$0	\$0	\$0	83%	0.0	0%	\$6,263	\$13,515	\$13,515	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
227	BEER	BEER Public	Mid Business Assessment	Custom	Unit	\$1,403	\$1,403	\$0	\$0	\$0	\$0	83%	0.0	0%	\$7,087	\$105,196	\$170,905	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
228	BEER	BEER Public	Pre-Ins Spray Valves OI CA	4.2.11	Unit	\$121	\$0	\$114	\$25	\$0	\$0	83%	1.0	0%	\$0	\$158	\$216	345	1,738	0	2	30.5	0.5	0.5	0.5		
229	BEER	BEER Public	Spray Valve (Small Restaurants OI)	4.2.11	Unit	\$97	\$0	\$115	\$25	\$0	\$0	83%	1.0	0%	\$0	\$380	\$463	45	2,384	0	23,443	3	19.8	2.8	2.8		
230	BEER	BEER Public	Spray Valve (Mid-Sized Restaurants OI)	4.2.11	Unit	\$97	\$0	\$115	\$25	\$0	\$0	83%	1.0	0%	\$0	\$380	\$463	478	3,396	0	16,564	3	19.8	4.2	4.2		
231	BEER	BEER Public	Disadvantage Community NTG 1 Savings	Custom	Unit	\$0	\$0	\$0	\$0	\$0	\$0	100%	12.1	0%	\$0	\$0	\$0	11,840	145,517	0	0	11,840	0.0	0.0	0.0	0.0	
232	BNC	CNC Private	Bonus Incentives - BNC	Custom	Unit	\$1,188	\$1,000	\$0	\$0	\$0	\$0	43%	0.0	0%	\$10,994	\$68,188	\$44,809	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
233	BNC	CNC Private	Large Commercial New Construction	Custom	sq ft	\$0	\$0	\$0	\$0	\$0	\$0	43%	20.0	0%	\$342,251	\$728,271	\$261,955	200,713	4,534,883	0	32,085,139	0	3.2	1.5	1.5		
234	BNC	CNC Private	Disadvantage Community NTG 1 Savings	Custom	Unit	\$0	\$0	\$0	\$0	\$0	\$0	100%	12.1	0%	\$0	\$0	\$0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
235	BNC	CNC Private	Bonus Incentives - BNC	Custom	Unit	\$1,323	\$1,323	\$0	\$0	\$0	\$0	43%	0.0	0%	\$16,464	\$68,188	\$44,809	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
236	BNC	CNC Private	Large Commercial New Construction	Custom	sq ft	\$0	\$0	\$0	\$0	\$0	\$0	43%	20.0	0%	\$34,347	\$68,188	\$104,373	10,889	234,308	0	1,359,350	3.2	0.8	0.8	0.8		
237	BNC	CNC Private	Disadvantage Community NTG 1 Savings	Custom	Unit	\$0	\$0	\$0	\$0	\$0	\$0	100%	12.1	0%	\$0	\$0	\$0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
238	Custom	Custom Private	Custom <15,000 Therms	Custom	Project	\$215,698	\$68,883	\$0	\$0	\$0	\$0	63%	18.1	0%	\$7,044,378	\$8,224,723	\$4,694,068	79,464,111	133	13.1	0.1	0.1	0.1	0.1	0.1		
239	Custom	Custom Private	Custom <15,000 Therms	Custom	Project	\$215,698	\$68,883	\$0	\$0	\$0	\$0	63%	18.1	0%	\$106,203	\$250,507	\$282,482	166,328	3,022,857	0	56	14.4	6.4	6.4	6.4		
240	Custom	Custom Private	Facility Assessment - Custom	Custom	Unit	\$1,511	\$1,511	\$0	\$0	\$0	\$0	63%	0.0	0%	\$146,320	\$250,507	\$422,366	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
241	Custom	Custom Private	Facility Assessment - Custom	Custom	Unit	\$717,555	\$27,925	\$0	\$0	\$0	\$0	63%	0.0	0%	\$1,455,361	\$2,525,951	\$4,239,951	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
242	Custom	Custom Private	Custom Bonus Incentives	Custom	Unit	\$9,405	\$9,405	\$0	\$0	\$0	\$0	63%	0.0	0%	\$67,007	\$487,564	\$497,596	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
243	Custom	Custom Private	HCA Project - Therm Boy	Custom	Project	\$201,357	\$27,383	\$0	\$0	\$0	\$0	63%	7.5	100%	\$660,964	\$660,964	\$172,108	338,795	3,548,484	0	27	0.0	0.0	0.0	0.0	0.0	
244	Custom	Custom Private	HCA Project	Custom	Project	\$21,053	\$21,053	\$0	\$0	\$0	\$0	63%	7.5	100%	\$281,380	\$281,380	\$327,527	334,029	2,505,219	0	17	42.6	4.5	4.5	4.5	4.5	
245	Custom	Custom Private	HCA Study - Concurrence	Custom	Unit	\$12,538	\$12,538	\$0	\$0	\$0	\$0	86%	0.0	100%	\$128,468	\$128,468	\$148,488	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
246	Custom	Custom Private	HCA Study - Shared Rooms	Custom	Unit	\$21,493	\$21,493	\$0	\$0	\$0	\$0	86%	0.0	100%	\$382,451	\$382,451	\$438,179	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
247	Custom	Custom Private	CHP Incentive FS	Custom	Unit	\$7,440	\$7,440	\$0	\$0	\$0	\$0	86%	0.0	0%	\$0	\$173,580	\$173,580	0	0	0	0	12	0.0	0.0	0.0	0.0	
248	Custom	Custom Private	CHP Project	Custom	Project	\$12,621	\$6,480	\$0	\$0	\$0	\$0	86%	0.0	0%	\$0	\$136,246	\$136,246	187,676	4,081,584	0	4	1.1	1.6	1.6	1.6	1.6	
249	Custom	Custom Private	Custom Project - GHP	Custom	Project	\$76,488	\$76,488	\$0	\$0	\$0	\$0	63%	20.0	0%	\$0	\$681,833	\$790,580	53,447	1,068,934	0	11	9.7	1.4	1.4	1.4	1.4	
250	Custom	Custom Private	Feasibility Study	Custom	Unit	\$7,440	\$7,440	\$0	\$0	\$0	\$0	63%	0.0	0%	\$0	\$99,433	\$117,235	0	0	0	0	17	0.0	0.0	0.0	0.0	
251	Custom	Custom Private	PCP Project	Custom	Project	\$62,620	\$12,120	\$0	\$0	\$0	\$0	63%	0.0	0%	\$0	\$99,433	\$117,235	1,105	21,862	0	2,203,615	11,547	0.1	19.8	0.1	19.8	0.1
252	Custom	Custom Private	Custom Project - GHP	Custom	Project	\$137,787	\$137,787	\$0	\$0	\$0	\$0	63%	20.0	0%	\$0	\$61,840	\$714,635	26,723	534,847	0	6	4.8	0.5	0.5	0.5	0.5	
253	Custom	Custom Public	Public Sector Custom <15,000 Therms	Custom	Project	\$12,621	\$12,621	\$0	\$0	\$0	\$0	63%	12.1	0%	\$162,738	\$250,507	\$432,366	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
254	Custom	Custom Public	Public Sector Custom <15,000 Therms Savings	Custom	Project	\$72,480	\$4,888	\$0	\$0	\$0	\$0	63%	16.5	40%	\$99,719	\$249,236	\$281,885	147,279	2,430,105	0	64	2.5	5.2	5.2	5.2	5.2	
255	Custom	Custom Public	Opportunity Assessments - Custom	Custom	Unit	\$6,644	\$6,644	\$0	\$0	\$0	\$0	63%	0.0	40%	\$150,767	\$379,768	\$490,139	0	0	0	0	62	0.0	0.0	0.0	0.0	
256	Custom	Custom Public	Facility Assessments - Custom	Custom	Unit	\$13,142	\$13,142	\$0	\$0	\$0	\$0	63%	0.0	40%	\$279,588	\$691,242	\$877,384	0	0	0	0	36	0.0	0.0	0.0	0.0	
257	Custom	Custom Public	Custom Bonus Incentives	Custom	Unit	\$13,344	\$13,344	\$0	\$0	\$0	\$0	63%	0.0	40%	\$147,017	\$387,5444											

Measure #	Program	Program Component	Measures	Measure Inputs										Measure Savings (2026-2029)										Measure Cost Effectiveness (2026-2029)		
				TRM Volume	Units	Incremental Cost	Incentive	Direct Install Labor	Direct Install Materials	Other Ratios	Net to Gross Ratio	Measure Life	ASBC Measure Allocation	2027 to 2029 ASBC Incentives	2027 to 2029 Total Incentives	Total 2026-2029 Incentives	First Year Therms	Lifetime Therms	Annual kWh	Annual gallons water	Total Participation	TRC	PAC			
314	HES	HES-AS	Attic Insulation (R19 to R40) SF	5.6, 5	Project	\$1,376	\$886	50	50	50	95%	30.0	100%	\$516,820	\$516,820	\$594,645	29,053	871,589	867	0	718	2.4	0.6			
315	HES	HES-AS	Air Sealing Without Insulation	5.6, 1	Project	\$208	\$199	50	50	50	95%	30.0	100%	\$618,435	\$618,435	\$786,521	422,128	2,442,523	1,655	0	1,359	8.0	0.8			
316	HES	HES-AS	Duct Sealing	5.3, 4	Project	\$1,125	\$719	50	50	50	95%	30.0	100%	\$1,745,847	\$1,745,847	\$2,096,351	238,003	4,703,839	394,195	0	2,976	9.7	1.7			
317	HES	HES-AS	Basement/Sidewall Insulation SF	5.6, 2	Project	\$642	\$189	50	50	50	95%	30.0	100%	\$326,271	\$326,271	\$387,973	64,446	1,983,365	1,047	0	1,044	6.4	1.2			
318	HES	HES-AS	Wall Insulation SF	5.4, 4	Project	\$1,033	\$699	50	50	50	95%	30.0	100%	\$463,904	\$463,904	\$532,844	50,076	1,652,388	1,713	0	877	4.4	1.3			
319	HES	HES-AS	Residential Deep Assessment	Custom	Unit	\$424	\$424	50	50	50	95%	30.0	100%	\$374,788	\$374,788	\$440,238	0	0	0	0	1,071	0.0	0.0			
320	HES	HES-AS	Low & Storm Window - SF	5.6, 7	Unit	\$187	\$187	50	50	50	95%	1884	20.0	\$36,517	\$36,517	\$39,424	62,114	1,042,774	5,109	0	508	4.1	0.4			
321	HES	HES-AS	Attic Insulation R19	5.6, 5	Project	\$1,448	\$973	50	50	50	95%	30.0	100%	\$651,988	\$651,988	\$772,714	203,328	615,866	470	0	382	4.5	1.1			
322	HES	HES-AS	High Performance Windows (Double Pane Base L2 up R1)	5.6, 8	Unit	\$81	\$81	50	50	50	95%	1349	40.0	\$73,493	\$73,493	\$87,944	3,762	151,691	17,848	0	1,128	5.4	0.3			
323	HES	HES-AS	Basement/Sidewall Insulation SF	5.6, 2	Project	\$1,033	\$699	50	50	50	95%	30.0	100%	\$463,904	\$463,904	\$532,844	50,076	1,652,388	1,713	0	1,086	0.0	0.0			
324	HES	HES-AS	Nonparticipant Spillover	NPSP	Unit	50	50	50	50	50	95%	1000	21.2	50	50	50	86,437	2,357,265	0	0	86,474	0.0	0.0			
325	HES	HES-AS	Disadvantage Community NTC & Savings	Custom	Unit	50	50	50	50	50	95%	12.3	100%	50	50	50	12,557	154,346	0	0	12,557	0.0	0.0			
326	HES	HES-AS	Utility Purchase or Exchange With No Therms	Custom	Unit	50	50	50	50	50	95%	12.3	100%	50	50	50	999,824	12,257,817	0	1.3	999,824	0.0	0.0			
327	HES	HES-AS	Number of Homes	Custom	Unit	50	50	50	50	50	95%	0.0	0%	50	50	50	0	0	0	0	4,550	0.0	0.0			
328	HES	HES-AS	Advanced Thermostat (BT - Blended SF	5.3, 10	Project	\$121	50	50	50	50	95%	11.0	100%	\$700,399	\$700,399	\$782,132	234,473	2,581,351	99,159	0	2,541	18.7	1.7			
329	HES	HES-AS	Bathroom Aerator SF (BT)	5.4, 4	Project	53	53	50	50	50	95%	1450	10.0	50	50	50	13,005	130,794	13,486	2,693,722	9,093	30.1	6.5			
330	HES	HES-AS	Low Flow Aerator SF (BT)	5.4, 1	Unit	54	54	50	50	50	95%	1350	12.0	\$18,693	\$18,693	\$21,063	41,935	503,538	0	0	3,981	81.8	9.9			
331	HES	HES-AS	Air Sealing - Door Sweep - DI	5.6, 1	Unit	238	13	50	50	50	95%	1350	20.0	\$5,432	\$5,432	\$5,812	39,835	376,405	19,511	0	4,049	24.2	2.4			
332	HES	HES-AS	Handheld Showerhead (DI) SF	5.4, 5	Project	\$21	\$21	50	50	50	95%	1450	10.0	50	50	50	17,882	191,371	63,648	68,475	46,214	9,224,279	4,550	44.6		
333	HES	HES-AS	Kitchen Aerator SF (DI)	5.4, 4	Project	53	53	50	50	50	95%	1450	10.0	50	50	50	16,119	172,476	20,511	205,301	17,871	4,569,151	53.8	7.4		
334	HES	HES-AS	Product Fulfillment Fee - Joint	Custom	Project	\$32	\$32	50	50	50	95%	0.0	0%	50	50	50	\$37,155	\$243,197	0	0	0	0	0	0		
335	HES	HES-AS	Programmable Thermostat (DI)	5.3, 13	Project	\$69	\$69	50	50	50	95%	1350	8.0	\$100,470	\$100,470	\$127,679	160,737	2,157,895	115,734	0	1,911	48.5	5.1			
336	HES	HES-AS	Showerhead (DI) SF	5.4, 5	Project	\$12	\$12	50	50	50	95%	1450	10.0	50	50	50	\$18,632	\$123,964	160,038	40,668	8,117,365	4,054	6.0			
337	HES	HES-AS	Number of Homes	Custom	Unit	50	50	50	50	50	95%	0.0	0%	50	50	50	0	0	0	0	1,784	0.0	0.0			
338	HES	HES-AS	Advanced Thermostat (BT - Blended SF joint	5.3, 10	Unit	\$120	50	50	50	50	95%	11.0	100%	\$185,191	\$185,191	\$208,522	136,295	1,499,207	1,904	0	1,784	16.7	1.3			
339	HES	HES-AS	Air Handler Filter	5.3, 15	Project	\$55	55	50	50	50	95%	1350	8.0	50	50	50	\$12,594	\$82,935	10,890	18,314	0	0	0	0		
340	HES	HES-AS	Assessment (HES)	Custom	Unit	\$130	\$130	50	50	50	95%	0.0	0%	\$111,739	\$111,739	\$123,475	\$248,650	0	0	0	0	1,784	0.0	0.0		
341	HES	HES-AS	Drill Pipe Installation	5.4, 1	Unit	51	51	50	50	50	95%	1350	12.0	50	50	50	\$1,641	\$5,306	948	12,375	0	0	0	0		
342	HES	HES-AS	Air Sealing - Door Sweep - DI	5.6, 1	Unit	238	13	50	50	50	95%	1350	20.0	\$5,079	\$5,079	\$5,400	2,633	12,561	12,772	0	268	37.9	3.7			
343	HES	HES-AS	Bathroom Aerator SF (DI)	5.4, 4	Project	53	53	50	50	50	95%	1450	10.0	50	50	50	\$1,206	\$1,489	385	3,847	397	79,227	268	28.6		
344	HES	HES-AS	Kitchen Aerator SF (DI)	5.4, 4	Project	56	56	50	50	50	95%	1450	10.0	50	50	50	\$1,108	\$1,390	348	3,488	209,825	1,588	41.2			
345	HES	HES-AS	Showerhead (DI) SF	5.4, 5	Project	\$12	\$12	50	50	50	95%	1450	10.0	50	50	50	\$5,109	\$6,366	3744	37,440	2,718	540,805	268	37.6		
346	HES	HES-AS	NPSP	NPSP	Unit	50	50	50	50	50	95%	0.0	0%	50	50	50	50	50	50	50	50	50	50	50	50	
347	HES	HES-AS	Disadvantage Community NTC & Savings	Custom	Unit	50	50	50	50	50	95%	12.3	100%	50	50	50	50	50	50	50	50	50	50	50	50	
348	IE AHWC	IE AHWC	Affordable Housing New Construction	Custom	sq ft	51	51	50	50	50	95%	20.0	100%	\$505,888	\$1,067,875	\$1,331,158	190,400	3,802,275	0	0	1,089,967	10.8	1.1			
349	IE WH	IE EDO SF	Number of Homes	Custom	Unit	50	50	50	50	50	95%	0.0	0%	50	50	50	50	50	50	50	50	50	50	50	50	
350	IE WH	IE EDO SF	Advanced Thermostat (TOS) - Manual SF joint	5.3, 10	Unit	\$251	\$251	50	50	50	95%	11.0	100%	\$12,300	\$12,300	\$16,148	6,690	73,588	366	0	65	10.2	2.3			
351	IE WH	IE EDO SF	Advanced Thermostat (TOS) - Programmable SF joint	5.3, 10	Unit	\$251	\$251	50	50	50	95%	11.0	100%	\$26,376	\$26,376	\$33,009	15,510	150,612	695	0	388	7.1	1.6			
352	IE WH	IE EDO SF	Air Sealing - R Retrofit SF joint	5.6, 1	Unit	\$135	\$135	50	50	50	95%	1350	20.0	\$135,024	\$135,024	\$154,476	75,148	902,864	1,425	0	43	1.6				
353	IE WH	IE EDO SF	Unit Assessment MF - Joint	Custom	Unit	\$243	\$243	50	50	50	95%	0.0	0%	\$50,260	\$50,260	\$64,223	0	0	0	0	168	0.0	0.0			
354	IE WH	IE EDO SF	Attic Insulation R19 Retrofit	5.6, 1	Unit	\$135	\$135	50	50	50	95%	1350	20.0	\$135,024	\$135,024	\$154,476	75,148	902,864	1,425	0	43	1.6				
355	IE WH	IE EDO SF	Bathroom Aerator SF (DI) joint IQ	5.4, 4	Project	57	50	54	51	50	95%	100%	10.0	50	50	50	\$270	\$303	82	822	0	0	0	0		
356	IE WH	IE EDO SF	Condensing Boilers >90% <300 MBH	4.4, 10	Unit	\$9,399	\$9,399	50	50	50	95%	100%	16.1	50	50	50	\$2,129	\$17,748	448	7,444	0	0	0	0		
357	IE WH	IE EDO SF	Residential Deep Assessment	Custom	Unit	\$270	\$270	50	50	50	95%	0.0	0%	\$44,566	\$44,566	\$53,209	0	0	0	0	17	0.0	0.0			
358	IE WH	IE EDO SF	Drill Pipe Installation	5.4, 1	Unit	54	50	53	51	50	95%	100%	12.0	\$9,748	\$9,748	\$4,974	2,814	33,794	0	0	1,083	14.9	3.2			
359	IE WH	IE EDO SF	Drill Pipe Installation	5.3, 13	Project	\$303	\$303	50	50	50	95%	100%	8.0	50	50	50	\$1,044	\$4,008	175	525	4	0	0	0		
360	IE WH	IE EDO SF	Drill Pipe Installation	5.4, 1	Unit	\$120	\$120	50	50	50	95%	100%	12.0	\$12,000	\$12,000	\$14,400	3,000	36,000	0	0	1,083	14.9	3.2			
361	IE WH	IE EDO SF	Furnace >95% AFUE	5.3, 7	Unit	\$5,705	\$5,705	50	50	50	95%	100%	20.0	50	50	50	\$10,485	\$205,149	6,646	133,245	0	0	0	0		
362	IE WH	IE EDO SF	Showerhead (DI) SF joint IQ	5.4, 5	Project	\$12	\$12	50	50	50	95%	100%	10.0	50	50	50	\$1,107	\$1,487	368	3,486	14	84,866	14	84,866		
363	IE WH	IE EDO SF	Health & Safety Services	Custom	Unit	\$530	\$530	50	50	50	95%	100%	0.0	\$109,961	\$109,961	\$144,841	0	0	0	0	276	0.0	0.0			
364	IE WH	IE EDO SF	Kitchen Aerator SF (DI) joint IQ	5.4, 4	Project	\$21	\$21	50	54	52	95%	100%	10.0	50	50	50	\$1,107	\$1,487	368	3,486	14	84,866	14	84,866		
365	IE WH	IE EDO SF	Handheld Shower																							

Measure #	Program	Program Component	Measures	TRM Volume	Units	Measure Budget										Measure Savings (2019-2025)										Measure Cost Effectiveness (2019-2025)		
						Incremental Cost	Incentive	Other Rebate	Net to Gross Ratio	Measure Life	ASBC Measure Allocation	2017 to 2019 ASBC Incentives	2017 to 2019 Total Incentives	Total 2019-2025 Incentives	First Year Therms	Lifecycle Annual kWh	Annual kWh	Annual gallons water	Total Participation	TRC	PAC							
422	E Ww	E Hn MF	Air Sealing IE Retrofits MF	5.6.1	Project	\$1,150	\$2,968	\$0	\$0	100%	20.0	100%	\$80,136	\$80,136	\$105,136	9,806	196,121	325	0	36	1.6	0.8						
423	E Ww	E Hn MF	Attic Insulation IE MF Retrofits	5.6.3	Project	\$1,150	\$15,314	\$0	\$0	100%	20.0	100%	\$51,318	\$51,318	\$76,318	1,506	12,128	0	4	1.7	0.3							
424	E Ww	E Hn MF	Door Pipe Insulation (1 ft) DI MF	5.4.1	Unit	\$127	\$0	\$0	\$0	100%	12.0	100%	\$2,000	\$2,000	\$2,000	140	0	0	135	3.4	0.7							
425	E Ww	E Hn MF	Health & Safety Services	Custom	Unit	\$212	\$212	\$0	\$0	100%	0.0	100%	\$14,310	\$14,310	\$14,310	0	0	0	90	0.0	0.0							
426	E Ww	E Hn MF	HVAC Indoor Air Quality Services	Custom	Unit	\$1,000	\$1,000	\$0	\$0	100%	0.0	100%	\$14,310	\$14,310	\$14,310	0	0	0	90	0.0	0.0							
427	E Ww	E Hn MF	Wall Insulation MF	5.6.4	Project	\$7,791	\$7,791	\$0	\$0	100%	30.0	100%	\$21,036	\$21,036	\$27,831	739	22,101	21	0	4	1.7	0.3						
428	E Ww	E Hn MF	Utility Purchase or Exchange kWh for Therms	Custom	Unit	\$0	\$0	\$0	\$0	100%	12.4	0%	\$0	\$0	\$0	5,504	0	5,504	0.0	0.0								
429	E Ww	E Hn SF	Advanced Thermostat (DI) - Programmable SF Joint	5.3.10	Unit	\$330	\$0	\$0	\$183	\$136	\$0	\$0	\$0	100%	11.0	100%	\$23,079	\$23,079	\$29,994	6,394	70,338	451	0	90	4.5	0.9		
431	E Ww	E Hn SF	Advanced Thermostat (DI) - Manual SF Joint	5.3.10	Unit	\$330	\$0	\$0	\$183	\$136	\$0	\$0	\$0	100%	11.0	100%	\$23,079	\$23,079	\$29,994	6,394	70,338	451	0	90	4.5	0.9		
432	E Ww	E Hn SF	Programmable Thermostat (DI) Joint	5.3.11	Project	\$168	\$0	\$0	\$117	\$58	\$0	\$0	\$0	100%	8.0	100%	\$708	\$708	\$921	331	3,304	7	0	5	4.2	0.3		
433	E Ww	E Hn SF	Combination Boiler, >95% AFUE <300 MBH - SF	5.3.17	Unit	\$6,360	\$6,360	\$0	\$0	100%	21.0	0%	\$0	\$0	\$23,843	\$23,843	\$29,817	0	4	4.7	0.6							
434	E Ww	E Hn SF	Furnace, >95% AFUE	5.3.7	Unit	\$6,625	\$6,625	\$0	\$0	100%	20.0	0%	\$0	\$0	\$23,212	\$23,212	\$27,477	0	11	5.1	0.7							
435	E Ww	E Hn SF	Handheld Showerhead (DI) SF Joint IQ	5.4.5	Project	\$362	\$0	\$0	\$39	\$39	\$0	\$0	\$0	100%	10.0	0%	\$0	\$0	\$2,410	\$3,131	\$360	3,363	7	46,422	32	9.1	1.2	
436	E Ww	E Hn SF	Kitchen Aerator SF (DI) Joint IQ	5.4.4	Project	\$25	\$0	\$0	\$39	\$39	\$0	\$0	\$0	100%	10.0	0%	\$0	\$0	\$250	\$380	110	1,301	0	18,576	34	1.7	0.2	
437	E Ww	E Hn SF	Bathroom Aerator SF (DI) Joint IQ	5.4.4	Project	\$25	\$0	\$0	\$39	\$39	\$0	\$0	\$0	100%	10.0	0%	\$0	\$0	\$250	\$380	25	293	0	5,843	28	1.7	0.3	
438	E Ww	E Hn SF	Handheld Showerhead (DI) SF Joint IQ	5.4.5	Project	\$152	\$0	\$0	\$43	\$12	\$0	\$0	\$0	100%	10.0	0%	\$0	\$0	\$984	\$1,738	239	2,910	5	33,616	24	0.8	0.1	
439	E Ww	E Hn SF	Watt. SF IQ Condensing 40 gal	5.4.2	Project	\$1,710	\$1,710	\$0	\$0	\$0	\$0	\$0	\$0	100%	14.0	0%	\$0	\$0	\$25,340	\$32,801	524	7,094	0	9	0.0	0.0		
440	E Ww	E Hn SF	Door Sealing	5.3.4	Project	\$1,272	\$1,272	\$0	\$0	\$0	\$0	\$0	\$0	100%	19.7	100%	\$81,138	\$81,138	\$105,438	5,026	89,113	7,813	0	84	2.3	0.8		
441	E Ww	E Hn SF	Air Sealing	5.6.1	Project	\$660	\$660	\$0	\$0	100%	20.0	100%	\$44,130	\$44,130	\$57,914	5,405	113,148	411	0	113	1.6	0.3						
442	E Ww	E Hn SF	Attic Insulation (R16 to R30) SF Hn	5.6.3	Project	\$1,908	\$1,908	\$0	\$0	100%	20.0	100%	\$126,275	\$126,275	\$170,879	6,895	205,714	104	0	114	1.6	0.3						
443	E Ww	E Hn SF	Floor Insulation Above Crawlspace	5.6.3	Project	\$2,604	\$2,604	\$0	\$0	100%	20.0	100%	\$161,676	\$161,676	\$210,097	10,206	306,194	87	0	82	3.4	0.7						
444	E Ww	E Hn SF	Door Pipe Insulation	5.4.1	Unit	\$51	\$0	\$0	\$4	\$1	\$0	\$0	\$0	100%	12.0	100%	\$1,677	\$1,677	\$2,176	1,068	0	0	417	13.0	0.8			
445	E Ww	E Hn SF	Rem/land joint insulation (R5 to R30) IE SF Hn	5.6.6	Project	\$477	\$477	\$0	\$0	100%	80.0	100%	\$2,705	\$3,015	\$112	3,964	6	0	7	0.0	0.0							
446	E Ww	E Hn SF	Wall Insulation SF	5.6.4	Project	\$1,484	\$1,484	\$0	\$0	100%	80.0	100%	\$8,444	\$10,844	371	11,180	11	0	7	0.0	0.0							
447	E Ww	E Hn SF	Assessment IE	Custom	Unit	\$636	\$636	\$0	\$0	100%	0.0	100%	\$44,092	\$44,092	\$70,292	0	0	0	112	0.0	0.0							
448	E Ww	E Hn SF	Health & Safety Services	Custom	Unit	\$330	\$330	\$0	\$0	100%	0.0	100%	\$45,077	\$45,077	\$68,577	0	0	0	112	0.0	0.0							
449	E Ww	E Hn SF	Utility Purchase or Exchange kWh for Therms	Custom	Unit	\$0	\$0	\$0	\$0	100%	12.4	0%	\$0	\$0	\$0	5,504	0	5,504	0.0	0.0								
450	E Ww	E HnWAP MF	Units Served	Custom	Unit	\$0	\$0	\$0	\$0	100%	0.0	100%	\$0	\$0	\$0	0	0	0	90	0.0	0.0							
451	E Ww	E HnWAP MF	Air Sealing Door Sweep	5.6.1	Project	\$85	\$85	\$0	\$0	100%	20.0	100%	\$17,389	\$17,389	\$21,341	1,835	\$7,081	735	0	105	5.3	1.1						
452	E Ww	E HnWAP MF	Air Sealing - Sealing Tape Joints	5.6.1	Project	\$1	\$1	\$0	\$0	100%	20.0	100%	\$17,379	\$17,379	\$20,338	1,833	\$6,455	688	0	118	7.8	1.6						
453	E Ww	E HnWAP MF	Air Sealing Weatherstripping 1 foot	5.6.1	Project	\$68	\$68	\$0	\$0	100%	20.0	100%	\$25,784	\$25,784	\$31,790	2,277	\$4,539	35	0	467	6.6	1.4						
454	E Ww	E HnWAP MF	Health & Safety Services	Custom	Unit	\$2,000	\$2,000	\$0	\$0	100%	0.0	100%	\$5,795	\$5,795	\$8,595	1,057	\$25,124	374	0	7	1.2	0.2						
455	E Ww	E HnWAP MF	Custom 2-500+ 2-500 Therms	Custom	Project	\$92,856	\$92,856	\$0	\$0	100%	15.0	35%	\$29,615	\$49,615	\$104,425	5,000	75,000	0	0	1	4.0	0.5						
456	E Ww	E HnWAP SF	Number of Homes	Custom	Unit	\$0	\$0	\$0	\$0	100%	0.0	100%	\$0	\$0	\$0	0	0	0	884	0.0	0.0							
457	E Ww	E HnWAP SF	Advanced Thermostat - (DI) - Blended - Single Family - IQ	5.3.10	Unit	\$210	\$0	\$0	\$106	\$90	\$0	\$0	\$0	100%	11.0	100%	\$60,243	\$60,243	\$81,889	35,992	395,913	0	0	421	9.6	0.5		
458	E Ww	E HnWAP SF	Air Sealing IE HnWAP SF	5.6.1	Project	\$1,787	\$1,784	\$0	\$0	100%	20.0	100%	\$98,041	\$98,041	\$127,522	89,140	1,761,805	5,440	0	130	2.3	0.7						
459	E Ww	E HnWAP SF	Attic Insulation IE SF HnWAP	5.6.3	Project	\$1,913	\$1,913	\$0	\$0	100%	20.0	100%	\$11,904,865	\$11,904,865	\$15,765,762	42,768	1,513,526	1,500	0	187	1.4	0.2						
460	E Ww	E HnWAP SF	Basement/Sidewall Insulation SF HnWAP	5.6.2	Project	\$1,711	\$1,711	\$0	\$0	100%	30.0	100%	\$170,031	\$170,031	\$208,938	4,100	131,505	87	0	53	1.1	0.3						
461	E Ww	E HnWAP SF	Basement Aerator SF (DI) Joint IQ	5.4.4	Project	\$25	\$0	\$0	\$39	\$39	\$0	\$0	\$0	100%	10.0	0%	\$0	\$0	\$250	\$380	110	1,301	0	18,576	34	1.7	0.2	
462	E Ww	E HnWAP SF	Basement, >95% AFUE <300 MBH - SF	5.3.6	Unit	\$6,310	\$6,310	\$0	\$0	100%	25.0	0%	\$0	\$0	\$83,862	\$120,640	3,884	97,012	0	0	19	1.1	0.2					
463	E Ww	E HnWAP SF	Door Pipe Insulation	5.4.1	Unit	\$51	\$0	\$0	\$4	\$1	\$0	\$0	\$0	100%	12.0	100%	\$17,569	\$17,569	\$22,535	12,481	149,734	0	0	479	14.7	3.0		
464	E Ww	E HnWAP SF	Door Sealing SF Unconditioned Joint	5.4.2	Project	\$1,125	\$1,125	\$0	\$0	100%	19.7	100%	\$17,481	\$17,481	\$20,360	11,412	275,861	0	0	99	4.5	4.6						
465	E Ww	E HnWAP SF	Floor Insulation Above Crawlspace Joint	5.6.3	Project	\$2,500	\$1,819	\$0	\$0	100%	20.0	100%	\$22,760	\$22,760	\$29,523	3,591	207,735	0	0	29	2.2	1.0						
466	E Ww	E HnWAP SF	Furnace Tune Up	5.3.7	Unit	\$1,171	\$1,171	\$0	\$0	100%	10.0	100%	\$6,371	\$6,371	\$14,519	801	2,409	0	0	1	1.2	0.8						
467	E Ww	E HnWAP SF	Furnace, >95% AFUE	5.3.7	Unit	\$2,175	\$2,175	\$0	\$0	100%	20.0	0%	\$0	\$0	\$63,357	\$87,134	62,068	1,209,187	0	0	345	3.1	0.6					
468	E Ww	E HnWAP SF	Handheld Showerhead (DI) SF - IQ All Joint	5.4.5	Project	\$39	\$0	\$0	\$17	\$15	\$0	\$0	\$0	100%	10.0	0%	\$0	\$0	\$3,306	\$4,251	340	3,400	7	48,314	103	3.1	0.4	
469	E Ww	E HnWAP SF	Health & Safety Services	Custom	Unit	\$1,000	\$1,000	\$0	\$0	100%	0.0	100%	\$437,250	\$437,250	\$558,857	0	0	0	112	0.0	0.0							
470	E Ww	E HnWAP SF	Handheld Showerhead (DI) SF Joint IQ	5.4.4	Project	\$137	\$0	\$0	\$17	\$17	\$0	\$0	\$0	100%	10.0	0%	\$0	\$0	\$1,310	\$1,360	283	2,838	0	48,228	86	14.7	0.8	
471	E Ww	E HnWAP SF	Handheld Showerhead (DI) All Joint	5.4.4	Project	\$137	\$0	\$0	\$17	\$17	\$0	\$0	\$0	100%	10.0	0%	\$0	\$0	\$1,310	\$1,360	283	2,838	0	48,228	86	14.7	0.8	
472	E Ww	E HnWAP SF	Handheld Showerhead (DI) All Joint	5.4.4	Project	\$137	\$0	\$0	\$17	\$17	\$0	\$0	\$0	100%	10.0	0%	\$0	\$0	\$1,310	\$1,360	283	2,838	0	48,228	86	14.7	0.8	
473	E Ww	E HnWAP SF	Showerhead (DI) SF - Joint IQ	5.4.5	Project	\$42	\$0	\$0	\$35	\$35	\$0	\$0	\$0	100%	10.0	0%	\$0	\$0	\$3,306	\$4,251	340	3,400	7	48,314	103	3.1	0.4	
474	E Ww	E HnWAP SF	Storage Water Heater, >6.6 EER	5.4.1	Unit	\$2,072	\$2,072	\$0	\$0	100%	15.0	0%	\$0	\$0	\$404,265	\$404,265	\$519,813	12,829	102,440	0	0	254	0.8	0.2				
475	E Ww	E HnWAP SF	Storage Water Heater, >6.6 EER	5.4.1	Project	\$1,563	\$1,563	\$0	\$118	\$158	\$0	\$0	\$0	100%														

Measure #	Program	Program Component	Measures	Measure Inputs										ASBC Measure Allocation	2017 to 2020 ASBC Incentives	2021 to 2023 ASBC Incentives	Total 2020-2023 Incentives	First Year Therms	Measure Savings (2020-2023)		Annual gallons water	Total Participation	TRC	PAC
				TRM Value	Units	Incentive Cost	Incentive	Direct Install Labor	Direct Install Materials	Other Rates	Net to Gross Ratio	Measure Life	Lifetime Annual kWh						Annual kWh					
530	E Wx	E Retrofits MF	Pipe Insulation, Steam Large 1.5" to 8" - CPOP	4.4,14	LN FT	156	156	0	0	0	100%	15.0	100%	7,221	7,221	6,715	14,230	233,446	0	357	54.0	10.6		
531	E Wx	E Retrofits MF	Pipe Insulation, Steam Large Fitting - CPOP	4.4,14	LN FT	23	23	0	0	0	100%	15.0	100%	4,839	4,839	5,246	6,016	96,184	0	135	37.8	7.4		
532	E Wx	E Retrofits MF	Pipe Insulation, Steam Med 2" to 3" - CPOP	4.4,14	LN FT	14	14	0	0	0	100%	15.0	100%	75,490	75,490	93,100	88,903	1,333,533	0	6,793	31.3	5.1		
533	E Wx	E Retrofits MF	Pipe Insulation, Steam Med Fitting - CPOP	4.4,14	LN FT	17	17	0	0	0	100%	15.0	100%	30,914	30,914	37,906	29,135	437,659	0	2,226	25.8	5.1		
534	E Wx	E Retrofits MF	Pipe Insulation, Steam Med Valve - CPOP	4.4,14	LN FT	17	17	0	0	0	100%	15.0	100%	4,911	4,911	5,926	13,513	202,886	0	164	76.4	14.8		
535	E Wx	E Retrofits MF	Pipe Insulation, Steam Small 1" to 2" - CPOP	4.4,14	LN FT	21	21	0	0	0	100%	15.0	100%	46,037	46,037	55,957	16,177	242,659	0	4,872	5.1	1.9		
536	E Wx	E Retrofits MF	Pipe Insulation, Steam X Large Fitting - CPOP	4.4,14	LN FT	336	336	0	0	0	100%	15.0	100%	15,710	15,710	6,006	48	7,203	0	13	77.7	15.2		
537	E Wx	E Retrofits MF	Programmable Thermostat (D) MF to Joint	5,3,11	Project	156	0	0	0	0	100%	8.0	100%	206,038	197,247	88,405	1,454,399	2,001	0	2,187	4.5	1.9		
538	E Wx	E Retrofits MF	Re-Program Thermostat (D) MF to Joint	5,3,11	Project	37	0	39	0	0	100%	2.0	100%	3,914	3,914	4,724	4,982	9,863	113	0	123	4.0	1.1	
539	E Wx	E Retrofits MF	Shower Timer - MF	5,4,5	Project	58	0	0	0	0	100%	2.0	100%	0	0	20,324	36,361	73,321	0	4,324,066	6,703	4.5	1.0	
540	E Wx	E Retrofits MF	Showhead (D) MF to Joint	5,4,5	Project	28	0	0	0	0	100%	10.0	100%	0	0	19,125	197,630	62,766	6,077,539	46,339	5,977	21.3	2.7	
541	E Wx	E Retrofits MF	Steam Boiler Averaging Controls - CPOP	4,4,36	Unit	2,276	2,276	0	0	0	100%	15.0	100%	37,739	37,739	45,544	102,773	154,896	0	204	7.3	1.5		
542	E Wx	E Retrofits MF	Steam Boilers >900, 1750-2500 MBH	4,4,10	Unit	6,809	6,809	0	0	0	100%	16.5	100%	0	0	65,946	82,239	51,926	856,777	0	12	21.6	4.3	
543	E Wx	E Retrofits MF	Steam Traps, Commercial	4,4,16	Unit	4,296	4,296	0	0	0	100%	6.0	100%	157,680	157,680	196,389	24,448	146,697	216	84,165	113	1.6	0.4	
544	E Wx	E Retrofits MF	Steam Traps - Test/Audit - CPOP	4,4,16	Unit	13	13	0	0	0	100%	6.0	100%	17,133	17,133	20,674	0	0	0	156	0.0	0.0	0	
545	E Wx	E Retrofits MF	Storage Water Heater - 55.67 TP	4,3,1	Unit	6,716	6,716	0	0	0	100%	15.0	100%	0	0	2,445	2,945	231	3,353	0	4	2.5	0.5	
546	E Wx	E Retrofits MF	Storage Water Heater - 9876 TP	4,3,1	Unit	6,716	6,716	0	0	0	100%	15.0	100%	0	0	13,433	18,624	9,722	145,825	0	28	13.3	3.4	
547	E Wx	E Retrofits MF	Shower Restrictor Valve - MF	5,4,8	Unit	95	95	0	0	0	100%	10.0	100%	0	0	18,405	13,788	1,961	18,405	0	811	24.9	1.5	
548	E Wx	E Retrofits MF	Unit Assessment MF - Joint	5,4,4	Unit	51	51	0	0	0	100%	0.0	100%	503,215	503,215	607,305	0	0	0	12,059	0.0	0.0	0	
549	E Wx	E Retrofits MF	Unit Assessment SF Retrofits	5,4,4	Project	15,533	15,533	0	0	0	100%	10.0	100%	387,912	387,912	468,132	22,786	681,691	433	0	607	2.2	0.5	
550	E Wx	E Retrofits MF	Unit Assessment SF Retrofits	5,4,4	Project	51	51	0	0	0	100%	10.0	100%	0	0	442	516	25	2,835	0	88	19.3	0.4	
551	E Wx	E Retrofits MF	Bathroom Aerator SF (D) IS	5,4,4	Project	7	0	2	3	0	100%	10.0	100%	0	0	362	435	82	936	0	19,768	88	7.3	1.0
552	E Wx	E Retrofits MF	Boiler Tune Up, 1500 MBH	4,4,2	Project	13	13	0	0	0	100%	1.0	100%	0	0	1,281	1,491	4	0	0	0	4.1	0.2	
553	E Wx	E Retrofits MF	Boiler Storage Tank Insulation - CPOP	4,4,14	SG FT	636	636	0	0	0	100%	15.0	100%	224,168	224,168	270,927	2,854	35,138	0	0	430	0.3	0.1	
554	E Wx	E Retrofits MF	Boilers, >900 AFUE - CA	4,4,11	Unit	1,099	1,099	0	0	0	100%	16.5	100%	0	0	14,499	19,800	7,575	6,489	12,768	0	22	6.4	1.3
555	E Wx	E Retrofits MF	Air Sealing - Sealing Tape	5,6,1	Project	51	51	0	0	0	100%	20.0	100%	1,042	1,042	1,258	905	7,862	0	889	12.3	3.4		
556	E Wx	E Retrofits MF	Attic Insulation E MF Retrofits	5,6,5	Project	25,399	25,399	0	0	0	100%	10.0	100%	180,701	180,701	220,494	4,638	139,127	141	0	9	1.3	0.2	
557	E Wx	E Retrofits MF	Attic Insulation SF	5,6,5	Project	12,616	12,616	0	0	0	100%	10.0	100%	16,629	16,629	20,678	5,668	17,526	133	0	386	0.6	0.1	
558	E Wx	E Retrofits MF	Commercial Gas Heat Pump	Custom	Project	40,815	30,067	0	0	0	100%	20.0	100%	0	0	126,125	125,213	33,448	659,576	0	4	7.3	1.8	
559	E Wx	E Retrofits SF	Number of Homes	Custom	Unit	0	0	0	0	0	100%	0.0	100%	0	0	0	0	0	0	0	2,388	0.0	0.0	0
560	E Wx	E Retrofits SF	Energy Assessment	Custom	Project	28	28	0	0	0	100%	0.0	100%	983,269	983,269	4,838,035	0	0	0	1,887	0.0	0.0	0	
561	E Wx	E Retrofits SF	Air Sealing E Retrofits SF	5,6,5	Project	4,079	4,079	0	0	0	100%	20.0	100%	1,798,513	1,798,513	2,173,456	210,232	4,204,463	12,283	0	2,035	4.2	0.8	
562	E Wx	E Retrofits SF	Air Sealing Door Sweeping	5,6,1	Project	40	40	0	0	0	100%	20.0	100%	52,782	52,782	53,631	14,287	12,287	249	0	84	8.1	1.5	
563	E Wx	E Retrofits SF	Air Sealing Gasket	5,6,1	Project	31	31	0	0	0	100%	20.0	100%	1,116	1,116	1,347	17	369	35	0	46	0.6	0.1	
564	E Wx	E Retrofits SF	Air Sealing Weatherstripping 1 foot	5,6,1	Project	51	51	0	0	0	100%	20.0	100%	34,458	34,458	41,621	17,342	346,946	2,700	0	35,654	18.3	3.5	
565	E Wx	E Retrofits SF	Air Sealing - Sealing Tape	5,6,1	Project	46	46	0	0	0	100%	20.0	100%	1,189	1,189	1,417	17	369	35	0	46	0.6	0.1	
566	E Wx	E Retrofits SF	Attic Insulation E SF Retrofits	5,6,5	Project	2,452	2,452	0	0	0	100%	10.0	100%	3,948,399	3,948,399	4,771,536	139,500	4,184,990	4,240	0	1,966	1.8	0.3	
567	E Wx	E Retrofits SF	Basement/Attic Insulation SF Retrofits joint	5,6,2	Project	1,582	1,582	0	0	0	100%	10.0	100%	392,510	392,510	716,033	21,061	631,688	476	0	457	1.8	0.3	
568	E Wx	E Retrofits SF	Boiler Tune Up, 75 MBH	4,4,2	Project	13	13	0	0	0	100%	1.0	100%	0	0	1,280	1,490	4	0	0	0	4.1	0.2	
569	E Wx	E Retrofits SF	Boilers, >900 AFUE - CBO MBH - SF	5,3,6	Unit	6,466	6,466	0	0	0	100%	25.0	100%	0	0	6,461	10,185	3,105	77,629	0	13	1.8	0.3	
570	E Wx	E Retrofits SF	Boiler Tune Up, 1500 MBH	4,4,2	Project	13	13	0	0	0	100%	1.0	100%	0	0	1,280	1,490	4	0	0	0	4.1	0.2	
571	E Wx	E Retrofits SF	Boiler Insulation Above Crawlspace joint	5,6,3	Project	2,500	1,848	0	0	0	100%	20.0	100%	45,491	45,491	52,866	35,770	1,073,104	0	0	287	2.2	0.5	
572	E Wx	E Retrofits SF	Boiler Tune Up	5,3,13	Project	3,025	3,025	0	0	0	100%	1.0	100%	0	0	12,789	12,936	11,281	13,839	253	0	743	0.4	0.1
573	E Wx	E Retrofits SF	Boilers, >900 AFUE	5,3,7	Unit	4,496	4,496	0	0	0	100%	20.0	100%	0	0	12,148	14,496	46,175	98,167	109	0	254	1.5	0.3
574	E Wx	E Retrofits SF	Health & Safety Services	Custom	Unit	1,590	1,590	0	0	0	100%	0.0	100%	2,318,705	2,318,705	5,488,485	0	0	0	1,462	0.0	0.0	0	
575	E Wx	E Retrofits SF	Health & Safety Services	Custom	Unit	1,590	1,590	0	0	0	100%	0.0	100%	2,318,705	2,318,705	5,488,485	0	0	0	1,462	0.0	0.0	0	
576	E Wx	E Retrofits SF	Joint Insulation (R13 to R33) SF	5,6,4	Project	1,590	1,590	0	0	0	100%	14.5	100%	0	0	229,517	276,931	4,763	68,086	0	82	0.6	0.1	
577	E Wx	E Retrofits SF	Joint Insulation SF Retrofits	5,6,4	Project	2,899	2,899	0	0	0	100%	10.0	100%	2,275,467	2,275,467	2,749,845	71,594	2,159,875	1,933	0	958	1.6	0.3	
578	E Wx	E Retrofits SF	Low E Storm Window - SF Joint	5,6,7	Unit	50	50	0	0	0	100%	10.0	100%	50,766	50,766	72,021	4,186	51,795	0	0	6	0.0	0.0	
579	E Wx	E Retrofits SF	Number of Homes	Custom	Unit	0	0	0	0	0	100%	0.0	100%	0	0	0	0	0	0	0	96	0.6	0.3	
580	E Wx	E Retrofits SF	Residential Energy Assessment	Custom	Unit	469	469	0	0	0	100%	0.0	100%	59,886	59,886	334,442	0	0	0	74	0.0	0.0	0	
581	E Wx	E Retrofits SF	Air Sealing E SF Retrofits	5,6,5	Project	3,395	3,395	0	0	0	100%	10.0	100%	15,030	15,030	17,138	5,981	107,255	343	0				

Measure #	Program	Program Component	Measures	TRM Volume	Units	Incremental Cost	Incentive	Measure Impact		Other Rates	Net to Gross Ratio	Measure Life	ASCC Measure Allocation	2017 to 2019 ASCC Incentives	2017 to 2020 Total Incentive	Total 2018-2020 Incentives	First Year Thermo	Measure Savings (2018-2020)		Annual gallons water	Measure Cost Effectiveness (2018-2020)		
								Direct Install Measure	Direct Incent Measure									Lifetime Thermo	Annual kWh		Total Participation	TRC	PAC
639	MF	MF DI	Advanced Thermostat (DI) - Programmable MF	1.3 LR	Unit	\$186	\$0	\$119	\$103	\$0	95%	11.0	100%	\$2,034	\$2,034	\$2,415	497	5,468	1,593	0	11	12.4	1.1
640	MF	MF DI	Programmable Thermostat (DI) MF-UI	1.3 LR	Unit	\$165	\$0	\$109	\$93	\$0	95%	11.0	100%	\$1,801	\$1,801	\$2,166	439	5,294	1,513	0	659	8.1	0.9
641	MF	MF DI	Re-Program Thermostat (DI) MF-UI	1.3 LR	Unit	\$135	\$0	\$89	\$74	\$0	95%	11.0	100%	\$1,575	\$1,575	\$1,903	328	4,443	1,313	0	291	9.1	1.0
642	MF	MF DI	Low Flow Aerator - Bath (DI) MF-CA	5.4 A	Project	\$7	\$5	\$5	\$5	\$5	100%	10.0	6%	\$1,861	\$2,210	\$34	834	8,340	777	155,090	386	19.7	1.8
643	MF	MF DI	Low Flow Aerator - Kitchen (DI) MF-CA	5.4 A	Project	\$7	\$5	\$5	\$5	\$5	100%	10.0	6%	\$2,336	\$2,821	\$153	1,189	886	179,210	118	13.0	2.2	
644	MF	MF DI	Showerhead (DI) MF-CA	5.4 S	Project	\$21	\$0	\$19	\$6	\$0	100%	10.0	0%	\$7,386	\$9,474	6,005	60,054	3,907	779,931	389	39.0	3.0	
645	MF	MF DI	Handheld Showerhead (DI) MF-CA	5.4 S	Project	\$34	\$0	\$31	\$11	\$0	100%	10.0	0%	\$9	\$154	\$154	7	708	47	24.5	1.8		
646	MF	MF DI	Shower Time, MF	5.4 S	Unit	\$7	\$5	\$5	\$5	\$5	100%	10.0	2.0%	\$5,517	\$6,314	6,464	12,969	9	846,451	1,374	7.1	1.0	
647	MF	MF DI	Low Flow Aerator - Bath (DI) MF-UI	5.4 A	Project	\$7	\$5	\$5	\$5	\$5	100%	10.0	6%	\$1,861	\$2,210	\$34	834	8,340	777	155,090	386	19.7	1.8
648	MF	MF DI	Low Flow Aerator - Kitchen (DI) MF-UI	5.4 A	Project	\$7	\$5	\$5	\$5	\$5	100%	10.0	6%	\$2,336	\$2,821	\$153	1,189	886	179,210	118	13.0	2.2	
649	MF	MF DI	Showerhead (DI) MF-UI	5.4 S	Project	\$21	\$0	\$19	\$6	\$0	100%	10.0	0%	\$7,386	\$9,474	6,005	60,054	3,907	779,931	389	39.0	3.0	
650	MF	MF DI	Handheld Showerhead (DI) MF	5.4 S	Project	\$34	\$0	\$31	\$11	\$0	100%	10.0	0%	\$9	\$159	\$168	1,458	95	18,501	8	24.5	1.8	
651	MF	MF DI	Garage Door Hinge	4.2 Z	Unit	\$20	\$0	\$103	\$143	\$0	98%	20.0	100%	\$3,931	\$3,391	\$1,380	213	4,265	0	5	12.0	1.2	
652	MF	MF DI	DHW Pipe Insulation (1 ft.) DI MF	5.4 I	Unit	\$5	\$5	\$5	\$1	\$0	100%	10.0	100%	\$1,019	\$1,019	\$1,310	1,907	15,689	0	6	38.0	5.9	
653	MF	MF DI	Nonparticipating Splitter	NPSD	Unit	\$0	\$0	\$0	\$0	\$0	100%	8.4	0%	\$0	\$0	\$0	5,555	0	0	0	0	0.0	0.0
654	MF	MF DI	Disadvantage Community NTC 1 Savings	Custom	Unit	\$0	\$0	\$0	\$0	\$0	98%	12.3	0%	\$0	\$0	\$0	0	0	0	0	0	0.0	0.0
655	MF	MF Prescriptive	Boiler Tune Up, 400 MBH	4.4 Z	Project	\$1,094	\$1,094	\$0	\$0	\$0	98%	3.0	0%	\$46,851	\$57,705	10,247	30,741	0	40	2.7	0.3		
656	MF	MF Prescriptive	Condensing Boilers, >90%	Custom	Unit	\$7,020	\$4,172	\$0	\$0	\$0	98%	25.0	0%	\$77,770	\$86,770	56,008	1,412,701	37	19,100	161	17	19.1	1.6
657	MF	MF Prescriptive	Furnace, >95% AFUE - MF-UI	Custom	Unit	\$604	\$604	\$0	\$0	\$0	98%	20.0	0%	\$16,954	\$12,942	2,367	47,346	0	22	14.2	1.7		
658	MF	MF Prescriptive	Laundromat Commercial Gas Clothes Dryer - Coin Operated	4.9 I	Unit	\$700	\$230	\$0	\$0	\$0	98%	10.0	0%	\$1,136	\$1,105	1,999	19,589	0	7	14.6	8.6		
659	MF	MF Prescriptive	Outdoor Pool Covers	4.3 A	Unit	\$2,040	\$1,614	\$0	\$0	\$0	98%	6.0	100%	\$14,446	\$14,446	\$17,308	11,117	66,705	0	79,482	11	11.9	2.1
660	MF	MF Prescriptive	Steam Traps, Commercial	4.9 B	Unit	\$77	\$71	\$0	\$0	\$0	98%	6.0	100%	\$1,217	\$1,217	\$1,441	4,483	26,936	39	18	63.7	1.8	
661	MF	MF Prescriptive	Unitless WH < 200MBH	4.3 I	Unit	\$1,250	\$793	\$0	\$0	\$0	98%	20.0	0%	\$4,713	\$5,309	9	1,183	0	7	1.6	1.2		
662	MF	MF Prescriptive	Unitless WH > 200 MBH	4.3 I	Unit	\$1,250	\$1,336	\$0	\$0	\$0	98%	20.0	0%	\$4,507	\$4,989	49	12,179	0	4	1.3	0.1		
663	MF	MF Prescriptive	Commercial Gas Heat Pump	Custom	Project	\$45,814	\$41,905	\$0	\$0	\$0	98%	20.0	0%	\$96,846	\$114,706	21,011	420,361	0	3	1	1.2		
664	MF	MF Prescriptive	Garage Door Hinge	4.2 Z	Unit	\$399	\$134	\$0	\$0	\$0	100%	10.0	100%	\$5,068	\$5,068	\$5,932	2,034	46,883	0	4	18.9	3.5	
665	MF	MF Prescriptive	CHW Controls - MF Buildings	4.3 B	Project	\$2,216	\$1,346	\$0	\$0	\$0	98%	15.0	100%	\$11,338	\$12,913	28,656	429,734	10,186	12	60.1	18.6		
666	MF	MF Prescriptive	Furnace, >92% AFUE	4.4 I	Unit	\$1,038	\$468	\$0	\$0	\$0	98%	16.5	0%	\$1,355	\$1,364	1,808	1,531	4,209	0	7	1.0	0.4	
667	MF	MF Prescriptive	Hydronic Boilers, <85%	Custom	Unit	\$1,557	\$1,557	\$0	\$0	\$0	98%	25.0	0%	\$9,939	\$9,689	8,476	211,966	0	15	23.5	2.4		
668	MF	MF Prescriptive	Storage Water Heater, >85% TE	4.3 I	Unit	\$1,250	\$793	\$0	\$0	\$0	98%	12.0	0%	\$1,250	\$1,250	\$1,474	38,328	0	14	22.2	1.4		
669	MF	MF Prescriptive	Steam Laundry	4.3 B	Unit	\$1,179	\$7,413	\$0	\$0	\$0	98%	10.0	0%	\$17,350	\$20,751	13,511	135,170	7	640,993	3	16.4	3.7	
670	MF	MF Prescriptive	Water Cooled Boilers	4.3 A	Unit	\$240	\$40	\$0	\$0	\$0	98%	10.0	0%	\$1,250	\$1,250	\$1,474	38,328	0	14	22.2	1.4		
671	MF	MF Prescriptive	Pipe Insulation, Indoor DHW	4.1 A	LN FT	\$1	\$1	\$0	\$0	\$0	98%	15.0	100%	\$123,997	\$123,997	\$138,968	48,426	176,390	0	28,795	8.2	4.2	
672	MF	MF Prescriptive	Pipe Insulation, Indoor RPS Space Heat	4.1 A	LN FT	\$14	\$15	\$0	\$0	\$0	98%	15.0	100%	\$170,282	\$170,282	\$190,934	66,719	1,000,934	0	39,480	6.7	3.4	
673	MF	MF Prescriptive	Custom 1,500-1,500 Therms	Custom	Project	\$1,068	\$5,978	\$0	\$0	\$0	98%	15.0	100%	\$1,068	\$1,068	\$1,068	10,138	0	0	13.0	0.76		
674	MF	MF Prescriptive	MF Custom >7500 Therms	Custom	Project	\$25,849	\$36,428	\$0	\$0	\$0	98%	18.0	0%	\$55,076	\$65,487	49,251	929,204	0	2	7.1	7.4		
675	MF	MF Prescriptive	Warm Mix Asphalt Additive 1000 tons	4.9 Z	Unit	\$1,200	\$1,200	\$0	\$0	\$0	98%	1.0	100%	\$9,675	\$11,475	2,018	2,018	0	0	4	1.0	0.1	
676	MF	MF Prescriptive	Warm Mix Asphalt Additive 5000 tons	4.9 Z	Unit	\$6,000	\$6,000	\$0	\$0	\$0	98%	1.0	100%	\$47,940	\$56,340	4,018	4,018	0	0	2.1	0.2		
677	MF	MF Prescriptive	Drain Water Heat Recovery - MF	4.1 I	Unit	\$1,060	\$1,060	\$0	\$0	\$0	98%	30.0	0%	\$6,660	\$7,834	988	26,811	0	4	14.3	1.7		
678	MF	MF Prescriptive	Nonparticipating Splitter	NPSD	Unit	\$0	\$0	\$0	\$0	\$0	100%	8.4	0%	\$0	\$0	\$0	16,176	378,386	0	0	0.1	0.0	
679	MF	MF Prescriptive	Disadvantage Community NTC 1 Savings	Custom	Unit	\$0	\$0	\$0	\$0	\$0	100%	12.3	0%	\$0	\$0	\$0	2,158	0	0	0	0	0.0	0.0
680	HEER	MFI	MFI Market Effect Savings Gas Heat Pumps	Custom	Unit	\$0	\$0	\$0	\$0	\$0	100%	16.0	0%	\$0	\$0	\$0	70,640	1,193,940	0	70,640	0.0	0.0	0.0
681	HEER	MFI	MFI Market Effect Savings High Performance Windows	Custom	Unit	\$0	\$0	\$0	\$0	\$0	100%	40.0	100%	\$0	\$0	\$0	6,116	244,642	0	6,116	0.0	0.0	0.0
Customized TRM																							
682	Outreach	Outreach EEE	EEB Eff. Gas Only	5.4 A, 5.4 S, 5.4 I	Unit	\$52	\$15	\$0	\$0	\$0	100%	5.5	17%	\$302,210	\$1,188,460	\$1,461,090	799,095	4,078,476	382,389	\$6,346,111	28,874	16.4	1.4
683	Outreach	Outreach EEE	Nonparticipating Splitter	NPSD	Unit	\$0	\$0	\$0	\$0	\$0	100%	5.8	0%	\$0	\$0	\$0	38,068	109,511	0	0	0.0	0.0	
684	Outreach	Outreach ESE	EEB 1	5.4 A, 5.4 S, 5.4 I	Unit	\$21	\$23	\$0	\$0	\$0	100%	8.0	0%	\$12,212	\$85,191	62,635	501,238	48,817	9,743,815	27,939	5.9	3.7	
685	Outreach	Outreach ESE	EEB 2	5.4 A, 5.4 S, 5.4 I	Unit	\$23	\$23	\$0	\$0	\$0	100%	8.4	0%	\$12,558	\$84,573	14,373	109,278	6,631	1,922,278	608	17.4	4.3	
686	Outreach	Outreach ESE	EEB 3	5.4 A, 5.4 S, 5.4 I	Unit	\$29	\$29	\$0	\$0	\$0	100%	8.8	0%	\$66,047	\$762,891	799,399	7,082,734	607,624	11,282,383	27,339	57.9	4.2	
687	Outreach	Outreach ESE	EEB 4	5.4 A, 5.4 S, 5.4 I	Unit	\$29	\$29	\$0	\$0	\$0	100%	8.8	0%	\$66,047	\$762,891	799,399	7,082,734	607,624	11,282,383	27,339	57.9	4.2	
688	Outreach	Outreach ESE	EEB 5	5.4 A, 5.4 S, 5.4 I	Unit	\$25	\$25	\$0	\$0	\$0	100%	8.7	0%	\$59,245	\$57,739	39,758	312,213	35,089	4,125,997	2,006	36.7	4.1	
689	Outreach	Outreach ESE	EEB 6	5.4 A, 5.4 S, 5.4 I	Unit	\$25	\$25	\$0	\$0	\$0	100%	8.7	0%	\$59,245	\$57,739	39,758	312,213	35,089	4,125,997	2,006	36.7	4.1	
690	Outreach	Outreach ESE	EEB 7	5.4 A, 5.4 S, 5.4 I	Unit	\$40	\$40	\$0	\$0	\$0	100%	8.5	0%	\$74,675	\$55,837	67,777	57,495	4,495	892,252	310	40.0	4.7	
691	Outreach	Outreach ESE	Nonparticipating Splitter	NPSD	Unit	\$339	\$310	\$0	\$0	\$0	100%	13.9	0%	\$1,841,756	\$2,149,068	27,863,192	27,863,192	0	1,841,756	84.5	8.1	0.0	
692	Outreach	Outreach HER	Home Reports	Custom	Unit	\$1,064	\$10	\$10	\$0	\$0	100%	2.8	0%	\$1,064	\$1,015	\$1,088	\$1,043	\$1,513	0	22,974	13.3	1.4	
693	Outreach																						

Measure #	Program	Program Component	Measures	Measure Inputs										Incremental Cost	Incentive	Direct Install Labor	Direct Install Materials	Other Rebate	Net to Gross Ratio	Measure Life	ASBC Measure Allocation	2017 to 2019 ASBC Incentives	2017 to 2019 Total Incentives	Total 2018-2019 Incentives	Measure Savings (2018-2019)			Annual gallons water	Measure Cost Effectiveness (2018-2019)		
				TRM Volume	Units	Unit Cost	Unit Incentive	Lifetime Annual kWh	Annual kWh	Annual kWh	Total Participation	TRC	PAC																		
740	SB	SB Private	Direct Fired Space Heater > 5000 MBH	Customized TRM	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$7,635	\$8,835	\$7,780	566,696	0	0	6	16.3	27.3						
741	SB	SB Private	Furnace, <92% AFUE	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$10,700	\$12,623	\$7,780	4,909	13,973	0	24	16.7	3.3						
742	SB	SB Private	Furnace, <95% AFUE	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$10,440	\$13,340	\$0,824	43,200	93,990	0	371	13.5	2.7						
743	SB	SB Private	Non-condensing Boilers, <85% <500 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$12,601	\$3,177	186	1,000	0	8	0.8	0.4							
744	SB	SB Private	Non-condensing Boilers, <85% 500-499 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$6,138	\$7,338	430	7,302	0	0	6	1.6	0.4						
745	SB	SB Private	Non-condensing Boilers, <85% 500-999 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$7,624	\$9,244	770	12,718	0	0	6	2.3	0.6						
746	SB	SB Private	Non-condensing Boilers, <85% 1000-1700 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$10,541	\$12,641	1,455	23,981	0	0	6	3.4	0.8						
747	SB	SB Private	Non-condensing Boilers, <85% 1700-2500 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$10,046	\$10,046	2,009	33,979	0	0	6	4.0	0.8						
748	SB	SB Private	Infused Boilers	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$75,300	\$80,300	98,381	0	0	17	1.1	2.2							
749	SB	SB Private	Storage Water Heater, <6.67 EF	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$427	\$487	286	4,408	0	0	6	3.8	3.8						
750	SB	SB Private	Storage Water Heater, <6.67 EF	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$853	\$973	2,024	30,811	0	0	6	13.4	13.2						
751	SB	SB Private	Steam Trap w/ Service, Commercial	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	6.0	100%	\$24,075	\$24,075	\$69,976	\$69,976	\$63,354	439	170,482	244	24.8	5.4						
752	SB	SB Private	Steam Trap, Commercial	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	6.0	100%	\$5,944	\$4,724	16,432	98,580	142	55,407	79	36.8	10.8							
753	SB	SB Private	Steam Trap, Indirect HP 10-30 psig	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	6.0	100%	\$17,000	\$17,000	48,500	411,094	137	456,705	91	50.4	6.6							
754	SB	SB Private	Steam Trap, Indirect HP 30-75 psig	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	6.0	100%	\$1,806	\$2,166	16,005	59,631	282	109,567	6	110.9	23.9							
755	SB	SB Private	Steam Trap, Indirect HP 75-125 psig	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	6.0	100%	\$5,611	\$3,611	\$4,331	62,938	177,579	1,053	410,194	12	209.3	49.2						
756	SB	SB Private	Steam Trap, Indirect HP 125-175 psig	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	6.0	100%	\$10,876	\$10,876	492,008	2,896,188	8,061	3,135,334	87	291.5	1.0							
757	SB	SB Private	Steam Trap, Indirect HP 175-250 psig	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	6.0	100%	\$5,614	\$3,614	\$4,334	118,547	711,400	1,977	78,919	12	892.4	85.0						
758	SB	SB Private	Steam Trap, Indirect HP 250 psig	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	6.0	100%	\$1,809	\$2,169	17,541	65,617	1,366	402,467	4	444.4	9.6							
759	SB	SB Private	Steam Trap, Dry Cleaner	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	6.0	100%	\$1,809	\$1,809	\$2,400,000	4,359,954	26,039,715	75,775	27,452,967	6,328	21.8	0.8						
760	SB	SB Private	Garage Door Hinge	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	20.0	100%	\$11,882	\$11,882	\$17,882	13,517	270,713	0	805	10.8	10.0							
761	SB	SB Private	Unlabeled Door Seal	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	100%	\$4,847	\$4,847	\$4,164	42,468	0	0	31	1.1	1.5							
762	SB	SB Private	Unitless WH <2000MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	20.0	0%	\$0	\$100,683	\$112,683	2,446	407,113	0	0	805	0.6	0.2						
763	SB	SB Private	Commercial Weather Stripping JH U	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	10.0	100%	\$2,348	\$2,348	\$3,032	421	4,310	777	0	44	3.2	0.7						
764	SB	SB Private	Door W/ Top Weep, DI	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	100%	\$5,751	\$5,751	\$4,504	132	2,389	0	319	1.1	0.2							
765	SB	SB Private	Laminar Flow	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	10.0	0%	\$0	\$556	\$607	927	9,270	0	145,668	37	46.4	7.8						
766	SB	SB Private	Facet Aerators - Bath, DI	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	10.0	0%	\$0	\$43,640	\$74,308	30,544	595,466	0	12	1.9	1.8							
767	SB	SB Private	Facet Aerators - Kitchen, DI	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	10.0	0%	\$0	\$43,640	\$74,308	30,544	595,466	0	146,468	340	18.9	2.3						
768	SB	SB Private	Low Flow Shower Heads, DI	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	10.0	0%	\$0	\$4,676	\$6,576	3,296	32,861	0	420,366	129	18.3	2.4						
769	SB	SB Private	Med Business Assessment	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	10.0	0%	\$1,200,000	\$2,061	\$2,883,629	0	0	0	2,678	0.1	0.0							
770	SB	SB Private	Pre-Rinse Sprayer Valves DI CA	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	5.0	0%	\$0	\$460	\$460	2,828	14,544	0	146,368	12	33.6	14.5						
771	SB	SB Private	Pre-Rinse Sprayer Valves DI CA	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	5.0	0%	\$0	\$460	\$460	2,828	14,544	0	146,368	12	33.6	14.5						
772	SB	SB Private	Spray Valve (Med Steel Restaurants) DI	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	5.0	0%	\$0	\$11,135	\$25,330	68,172	540,039	0	5,503,673	299	44.8	6.3						
773	SB	SB Private	Spray Valve (Med Steel Restaurants) DI	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	5.0	0%	\$0	\$11,135	\$25,330	68,172	540,039	0	66,101	127	3.9	0.6						
774	SB	SB Private	Custom > 7,500 Therms	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$112,380	\$112,380	\$1,818	71,881	13	13	2.1	1.3							
775	SB	SB Private	Custom > 7,500 Therms	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	17.2	0%	\$0	\$17,511	\$20,300	\$51,783	6,084,173	0	0	6	5.6	124.7						
776	SB	SB Private	Disadvantage Community NY10 Savings	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	12.1	0%	\$0	\$1,366	\$0	\$6,187	821,881	0	0	26,187	0.0	0.0						
777	SB	SB Private	Disadvantage Community NY10 Savings	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	12.1	0%	\$11,366	\$2,737	\$24,413	0	0	0	4	0.0	0.0							
778	SB	SB Public	Boiler Tune Up, Process	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	2.0	100%	\$2,929	\$2,929	\$3,400	3,133	8,304	0	0	4	4.2	1.0						
779	SB	SB Public	Boiler Tune Up, 100 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	14.2	0%	\$0	\$1,500	\$4,138	1,511	4,398	0	0	3	6.1	1.3						
780	SB	SB Public	Pipe Insulation, Indoor DHW	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	100%	\$2,736	\$2,736	\$3,082	6,011	9,143	0	869	4.1	1.2							
781	SB	SB Public	Pipe Insulation, Indoor WH Space Heat	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	100%	\$3,212	\$3,212	\$3,618	718	10,364	0	413	4.1	1.2							
782	SB	SB Public	Pipe Insulation, Outdoor JPS Space Heat	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	100%	\$11,400	\$11,400	\$14,700	60,076	901,485	0	1,477	68.8	24.4							
783	SB	SB Public	Condensing Boilers, <90% <500 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$3,904	\$4,775	902	14,877	0	0	4	2.4	1.3						
784	SB	SB Public	Condensing Boilers, <90% 500-499 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$2,736	\$3,138	1,668	17,836	0	0	4	1.6	0.9						
785	SB	SB Public	Condensing Boilers, <90% 500-999 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$11,086	\$17,440	2,811	46,381	0	0	4	4.1	1.1						
786	SB	SB Public	Condensing Boilers, <90% 1000-1700 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$21,116	\$24,885	4,235	70,209	0	0	3	5.2	1.2						
787	SB	SB Public	Condensing Boilers, <90% 1700-2500 MBH	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$20,317	\$26,128	4,681	112,161	0	0	3	6.1	1.3						
788	SB	SB Public	Furnace, <92% AFUE	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$2,888	\$3,461	948	807	2,177	0	4	10.1	2.0						
789	SB	SB Public	Furnace, <95% AFUE	Unit	Unit	\$13.70	\$13.70	\$0	\$0	\$0	\$0	\$0	96%	15.0	0%	\$0	\$4,412	\$5,268	1,408	1,408	6,531	0	4	1.2	0.8						
790	SB	SB Public	Infused																												

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Measure #	Program	Program Component	Measures	Measure Inputs										Measure Savings (2026-2029)				Measure Cost Effectiveness (2026-2029)					
				TRM Volume	Units	Incremental Cost	Incentive	Direct Install Labor	Direct Install Materials	Other Rebate	Net to Gross Ratio	Measure Life	ASCC Measure Allocation	2027 to 2029 ASCC Incentives	2027 to 2029 Total Incentives	Total 2026-2029 Incentives	First Year Therms	Lifecycle Therms	Annual kWh	Annual gallons water	Total Participation	TRC	PAC
845	E	Moderate	E Moderate SF Bathroom Aerator SF (DI) Joint RQ	5.4.4	Project	\$7	\$0	\$4	\$1	\$0	80%	10.0	0%	\$0	\$1,299	\$1,299	237	2,370	0	62,374	284	7.3	1.1
846	E	Moderate	E Moderate SF Return Pipe Insulation - R2.8	5.4.2	LN FT	53	27	50	50	\$0	80%	15.0	100%	\$174	\$174	\$174	47	720	0	551	4.9	1.8	0.2
847	E	Moderate	E Moderate SF Drain Pipe Insulation	5.4.1	Unit	52	50	51	50	\$0	80%	12.0	100%	\$1,306	\$1,306	\$1,306	1,642	18,740	0	751	35.3	8.2	1.7
848	E	Moderate	E Moderate SF Handfield Showerhead (DI) SF Joint RQ	5.4.3	Project	\$38	\$0	\$11	\$17	\$0	80%	10.0	0%	\$4,909	\$4,909	\$4,909	1,407	14,074	39	260,633	373	13.9	3.0
849	E	Moderate	E Moderate SF Kitchen Aerator SF (DI) Joint RQ	5.4.4	Project	57	\$0	\$4	\$1	\$0	80%	10.0	0%	\$0	\$200	\$200	208	2,880	0	66,493	114	41.3	2.5
850	E	Moderate	E Moderate SF Programmable Thermostat (DI) Joint	5.3.11	Project	\$122	\$0	\$81	\$41	\$0	80%	8.0	100%	\$5,840	\$5,840	\$5,840	2,387	30,095	66	0	48	9.5	2.1
851	E	Moderate	E Moderate SF Shower Restrictor Valve, SF	5.4.8	Unit	\$38	\$11	\$0	\$0	\$0	80%	10.0	0%	\$0	\$388	\$388	49	494	0	8,137	16	3.0	1.6
852	E	Moderate	E Moderate SF Showerhead (DI) SF - RQ	5.4.3	Project	\$38	\$0	\$14	\$4	\$0	80%	10.0	0%	\$0	\$2,801	\$2,801	418	4,180	380	75,938	355	7.5	0.9
853	E	Moderate	E Moderate SF Thermostat Education (DI)	5.3.11	Project	\$25	\$0	\$9	\$0	\$0	80%	2.0	100%	\$167	\$167	\$167	937	1,862	862	0	18	12.0	7.7
854	E	Moderate	E Moderate MF Units Serviced	Custom	Unit	\$6	\$0	\$0	\$0	\$0	80%	0.0	0%	\$0	\$0	\$0	0	0	0	0	384	0.0	0.0
Covers and Gap Seals for Room Air Conditioners Joint,																							
855	E	Moderate	E Moderate MF MF - Mid Rise, 5 Stories Joint	4.4.36	Project	\$2,780	\$82	\$0	\$0	\$0	80%	5.0	100%	\$511	\$511	\$511	1,470	7,349	398	0	6	1.2	0.4
856	E	Moderate	E Moderate MF Advanced Thermostat (DI) - Blended MF Joint	5.3.16	Unit	\$220	\$0	\$122	\$148	\$0	80%	11.0	100%	\$8,733	\$8,733	\$8,733	1,805	19,853	177	0	39	6.4	1.3
857	E	Moderate	E Moderate MF Air Sealing IE Retrofits MF	5.6.1	Project	\$3,158	\$1,448	\$0	\$0	\$0	80%	20.0	100%	\$29,482	\$29,482	\$29,482	4,437	88,737	196	0	20	3.8	1.6
858	E	Moderate	E Moderate MF Air Sealing Door Sweep -DI	5.6.1	Unit	\$53	\$0	\$30	\$13	\$0	80%	20.0	100%	\$11,654	\$11,654	\$11,654	2,132	42,459	1,040	0	364	10.3	1.9
859	E	Moderate	E Moderate MF Air Sealing Weatherstripping 1 foot	5.6.1	Project	118	\$0	111	37	\$0	80%	20.0	100%	\$1,688	\$1,688	\$1,688	37	784	7	0	36	1.2	0.2
860	E	Moderate	E Moderate MF attic insulation E MF Retrofits	5.6.5	Project	\$9,636	\$9,535	\$0	\$0	\$0	80%	80.0	100%	\$192,205	\$192,205	\$192,205	8,527	255,817	317	0	20	3.4	0.6
861	E	Moderate	E Moderate MF Basement/Crawl Insulation MF (new&retrofits)	5.6.2	Project	\$1,063	\$780	\$0	\$0	\$0	80%	30.0	100%	\$874	\$874	\$874	42	1,288	1	0	1	2.5	0.6
862	E	Moderate	E Moderate MF Health & Safety Services	Custom	Unit	\$2,000	\$2,000	\$0	\$0	\$0	80%	0.0	100%	\$277,585	\$277,585	\$277,585	0	0	0	0	139	0.0	0.0
863	E	Moderate	E Moderate MF Boiler Reset Controls	5.3.14	Project	\$612	\$1	\$0	\$0	\$0	80%	18.0	100%	\$719	\$719	\$719	13,056	288,887	0	0	248	3.9	1.4
864	E	Moderate	E Moderate MF Drain Pipe Insulation (1 FT.) DI MF	5.4.1	Unit	111	\$0	\$8	\$1	\$0	80%	12.0	100%	\$21,190	\$21,190	\$21,190	4,014	48,389	0	0	1,599	6.4	1.3
865	E	Moderate	E Moderate MF Handfield Showerhead (DI) MF Joint	5.4.3	Project	\$32	\$0	\$13	\$19	\$0	80%	10.0	0%	\$0	\$1,245	\$1,245	385	3,847	9	67,205	39	14.2	1.8
866	E	Moderate	E Moderate MF Low Flow Aerator - Bath (DI) MF (DI) All Joint RQ	5.4.4	Project	57	\$0	\$3	\$3	\$0	80%	10.0	0%	\$0	\$1,480	\$1,480	481	4,814	0	109,456	317	12.4	1.9
867	E	Moderate	E Moderate MF Low Flow Aerator - Kitchen (DI) MF (DI) Joint RQ	5.4.4	Project	57	\$0	\$3	\$4	\$0	80%	10.0	0%	\$0	\$2,809	\$2,809	1,200	11,995	0	226,126	466	19.3	2.4
868	E	Moderate	E Moderate MF Non-condensing Boilers, 180% 500-999 MBH	4.4.10	Unit	\$21,276	\$21,276	\$0	\$0	\$0	80%	16.3	0%	\$0	\$53,389	\$53,389	293	4,311	0	2	0.2	0.0	0.0
869	E	Moderate	E Moderate MF On-Demand DRW Controller -CPOF	4.3.8	Project	\$9,125	\$9,125	\$0	\$0	\$0	80%	15.0	100%	\$10,412	\$10,412	\$10,412	104	2,361	2,940	0	3	0.6	0.1
870	E	Moderate	E Moderate MF Pipe Insulation, DRW Large >2" -CPOF	4.4.16	LN FT	\$14	\$11	\$0	\$0	\$0	80%	15.0	100%	\$1,745	\$1,745	\$1,745	293	14,632	0	0	383	18.0	4.6
871	E	Moderate	E Moderate MF Pipe Insulation, DRW Medium 1.5 to 2" -CPOF	4.4.16	LN FT	\$21	\$11	\$0	\$0	\$0	80%	15.0	100%	\$8,923	\$8,923	\$8,923	3,961	43,036	0	0	852	6.9	2.7
872	E	Moderate	E Moderate MF Pipe Insulation, DRW Small <1.5 2" -CPOF	4.4.16	LN FT	\$14	\$11	\$0	\$0	\$0	80%	15.0	100%	\$14,748	\$14,748	\$14,748	2,762	41,283	0	0	1,378	6.0	1.5
873	E	Moderate	E Moderate MF Pipe Insulation, HW Large 4" -CPOF	4.4.16	LN FT	\$15	\$15	\$0	\$0	\$0	80%	15.0	100%	\$486	\$486	\$486	238	3,837	0	0	29	24.6	4.8
874	E	Moderate	E Moderate MF Pipe Insulation, HW Medium 2" to 4" -CPOF	4.4.16	LN FT	\$14	\$13	\$0	\$0	\$0	80%	15.0	100%	\$5,496	\$5,496	\$5,496	2,182	37,724	0	0	430	12.2	3.3
875	E	Moderate	E Moderate MF Pipe Insulation, HW Small -CPOF	4.4.16	LN FT	\$14	\$9	\$0	\$0	\$0	80%	15.0	100%	\$4,684	\$4,684	\$4,684	1,412	21,179	0	0	520	7.2	2.5
876	E	Moderate	E Moderate MF Pipe Insulation, Steam Large 2" to 4" -CPOF	4.4.16	LN FT	\$20	\$15	\$0	\$0	\$0	80%	15.0	100%	\$574	\$574	\$574	369	4,729	0	0	36	27.6	11.2
877	E	Moderate	E Moderate MF Pipe Insulation, Steam Large Fitting -CPOF	4.4.16	LN FT	\$21	\$21	\$0	\$0	\$0	80%	15.0	100%	\$345	\$345	\$345	233	4,783	0	0	16	40.3	7.9
878	E	Moderate	E Moderate MF Pipe Insulation, Steam Med 2.3" to 3" -CPOF	4.4.16	LN FT	\$14	\$13	\$0	\$0	\$0	80%	15.0	100%	\$5,997	\$5,997	\$5,997	4,913	73,889	0	0	469	31.5	6.7
879	E	Moderate	E Moderate MF Pipe Insulation, Steam Med Fitting -CPOF	4.4.16	LN FT	\$16	\$16	\$0	\$0	\$0	80%	15.0	100%	\$2,456	\$2,456	\$2,456	1,616	24,499	0	0	154	27.5	14
880	E	Moderate	E Moderate MF Pipe Insulation, Steam Med Valve -CPOF	4.4.16	LN FT	\$16	\$16	\$0	\$0	\$0	80%	15.0	100%	\$390	\$390	\$390	747	11,230	0	0	24	80.4	15.7
881	E	Moderate	E Moderate MF Pipe Insulation, Steam Small 1" to 2" -CPOF	4.4.16	LN FT	\$21	\$11	\$0	\$0	\$0	80%	15.0	100%	\$3,657	\$3,657	\$3,657	889	11,499	0	0	843	3.2	2.0
882	E	Moderate	E Moderate MF Pipe Insulation, Steam > Large Fitting -CPOF	4.4.16	LN FT	\$15	\$15	\$0	\$0	\$0	80%	15.0	100%	\$14	\$14	\$14	23	461	0	0	1	89.9	18.3
883	E	Moderate	E Moderate MF Programmable Thermostat (DI) MF (U) Joint	5.3.11	Project	\$256	\$0	\$104	\$52	\$0	80%	8.0	100%	\$23,519	\$23,519	\$23,519	4,885	39,079	1,851	0	311	4.8	1.1
884	E	Moderate	E Moderate MF Re-Program Thermostat (DI) MF (U) Joint	5.3.11	Project	\$57	\$0	\$37	\$0	\$0	80%	2.0	100%	\$311	\$311	\$311	311	911	0	0	8	5.2	1.2
885	E	Moderate	E Moderate MF Shower Timer, MF	5.4.9	Unit	\$7	\$0	\$2	\$1	\$0	80%	2.0	0%	\$0	\$2,279	\$2,279	2,004	4,007	0	320,600	603	4.0	1.0
886	E	Moderate	E Moderate MF Showerhead (DI) MF (U)	5.4.3	Project	\$20	\$0	\$16	\$4	\$0	80%	10.0	0%	\$0	\$7,081	\$7,081	3,418	34,684	2,768	605,849	351	22.8	2.9
887	E	Moderate	E Moderate MF Steam Boiler Averaging Controls -CPOF	4.4.36	Unit	\$210	\$113	\$0	\$0	\$0	80%	15.0	100%	\$2,998	\$2,998	\$2,998	168	8,513	0	0	14	8.0	1.6
888	E	Moderate	E Moderate MF Steam Boilers, 200% 1702-2500 MBH	4.4.10	Unit	\$6,500	\$6,500	\$0	\$0	\$0	80%	16.5	0%	\$0	\$5,414	\$5,414	2,869	47,344	0	0	1	23.3	4.6
889	E	Moderate	E Moderate MF Steam Traps -Commercial	4.4.10	Unit	\$2,000	\$1,600	\$0	\$0	\$0	80%	6.0	100%	\$12,537	\$12,537	\$12,537	1,155	6,186	12	0	8	1.2	0.4
890	E	Moderate	E Moderate MF Steam Traps -Test/Audit -CPOF	Custom	Unit	\$22	\$22	\$0	\$0	\$0	80%	0.0	100%	\$1,361	\$1,361	\$1,361	0	0	0	0	63	0.0	0.0
891	E	Moderate	E Moderate MF Storage Water Heater, <6.67 EF	4.3.1	Unit	\$640	\$640	\$0	\$0	\$0	80%	15.0	0%	\$0	\$194	\$194	12	183	0	0	0	2.7	0.5
892	E	Moderate	E Moderate MF Storage Water Heater, >6.67 EF	4.3.1	Unit	\$870	\$870	\$0	\$0	\$0	80%	15.0	0%	\$0	\$1,226	\$1,226	537	8,058	0	0	2	13.6	1.6
893	E	Moderate	E Moderate MF Shower Restrictor Valve, MF	5.4.8	Unit	\$85	\$85	\$0	\$0	\$0	80%	10.0	0%	\$0	\$2,237	\$2,237	1,075	1,075	0	16,748	26	2.3	0.3

\$88,301,969 \$138,890,685 \$163,805,617 66,425,193 \$36,582,150

Appendix B – Adjustable Goals Template

The official approved savings goals will be those set forth in the completed Adjustable Savings Goal Template, as those may be updated annually based on the Adjustable Savings Goals policy approved in Section 6.2 of the Illinois Energy Efficiency Policy Manual Version 3.1 ("Policy Manual"). In addition, gas utility annual energy savings goals will be adjusted for the entire Plan period, prior to the start of the first Plan Year of an approved Plan, so that they are aligned with changes to IL-TRM values and the most recent Evaluator's recommended Net-to-Gross (NTG) Ratio values available.

The adjustable goals template provides the measure and program savings summary in the SAG generated format. This template includes NTG collars for the HEER, BEER, BOP and Custom programs meeting the NTG collar criteria in Section 6.2 of the Policy Manual. Appendix B Adjustable Savings Goals Template will be submitted to the ICC in a supplemental filing in this plan. This includes the independent evaluators verification that in 2026 the adjustments to the energy savings goals template have been performed accurately and are performed accurately with the annual Illinois TRM version updates effective in 2027 to 2029.

Adjustable Savings Goals Policy Guidelines
Updated 04/15/2025

Background:

The Commission's December 16, 2015 Final Order in ICC Docket No. 15-0487 approved and adopted the Illinois Energy Efficiency Policy Manual Version 1.0 ("Policy Manual"), which includes an Adjustable Savings Goals policy set forth in Subsection 6.2. During initial Policy Manual Subcommittee Version 2.0 discussions in early 2016, several parties proposed updates to this policy. This is now all covered under Policy Manual Version 3.0
Effective Date: January 1, 2024

Prior to the Energy Efficiency Plan ("Plan") filings required by Sections 8-103 and 8-104 of the Illinois Public Utilities Act in fall 2016, Policy Manual Subcommittee participants agreed to draft guideline language to interpret the approved Version 3.0 Adjustable Savings Goal policy, including a template on how to calculate adjustable savings goals.

Note: Capitalized terms are defined in Policy Manual Section 1: Glossary.

Adjustable Savings Goals Policy:

See *Illinois Energy Efficiency Policy Manual Version 3.0, Section 6, Program Administration and Reporting, Subsection 6.2 & 6.3: Adjustable Savings Goals*.

Program Administrator and/or IPA annual energy savings goals will be adjusted to align them with changes to IL-TRM values.

In addition, Program Administrator and/or IPA annual energy savings goals will be adjusted to align them with the Evaluator's recommended Net-to-Gross values for the entire Plan period prior to the start of the first Plan Year of an approved Plan or Section 16-111.5B Program.

Within sixty (90) days after Commission approval of the annual IL-TRM values, each Program Administrator will file adjusted energy savings goals reflecting updated IL-TRM values applicable to the Program Year.

Policy Guidelines – Adjustable Savings Goals for Section 16-111.5B Programs:

- Once a Section 16-111.5B Program is approved by the Commission, the vendor has the opportunity to negotiate different participation rates and/or Measure levels. Once the contract is signed, those Measures / participation rates will be fixed for the life of the contract for the purpose of setting annual savings goals. However, the vendor and the utility may negotiate a change in the Measure mix, for Program implementation and goal attainment purposes.
- Changes to the Illinois Statewide Technical Reference Manual for Energy Efficiency ("IL-TRM") will be applied on an annual basis to the gross unit savings values for the applicable Program Year. This will set the energy savings goal for the applicable Program Year.
- If the independent Evaluator recommends an updated Net-to-Gross ("NTG") value for a Section 16-111.5B Program, the energy savings goal can be adjusted during the contract negotiation process, prior to the first Program Year of the contract. After contract execution of the approved Program, the energy savings goal will not be adjusted due to NTG changes in later Program Years.

Policy Guidelines – Adjustable Savings Goals for Section 8-103 and 8-104 Programs:

- After Commission approval of a Section 8-103 and/or 8-104 Plan the Measure participation levels identified in the approved Plan to derive the energy savings goals will be fixed for the entirety of the Plan for the purpose of calculating the adjusted energy savings goals.[1]
- Prior to the start of the first Program Year of an approved Plan, the Program Administrator's energy savings goal will be adjusted for respective Program Years over the entire Plan period in cases where the Evaluator's final recommended Net-to-Gross ("NTG") value for a Program, Sub-Program, or Measure differs from the NTG value used to calculate energy savings goals in the Program Administrator's approved Plan. The Program Administrator's energy savings goals will not be adjusted due to a change in the NTG value during the second and third Program Years of an approved Plan.[2]
- Changes to the Illinois Statewide Technical Reference Manual for Energy Efficiency ("IL-TRM") will be applied on an annual basis to the gross unit savings values for the applicable Program Year, consistent with the EEPS Adjustable Savings Goal Template and guidelines. This will produce the adjusted energy savings goals and adjusted weighted average measure life.

EEPS Adjustable Savings Goal Template

Illinois Program Administrators will file the completed EEPS Adjustable Savings Goal Template for Section 8-103/8-104 Programs and Measures in the Electric Plan 6 (covering Electric Program Years 14-16) and Gas Plan 5 (covering Gas Program Years 15-18) dockets. The Excel version of the completed EEPS Adjustable Savings Goal Template will also be posted on the Illinois Energy Efficiency Stakeholder Advisory Group ("SAG") website.

Following Commission approval of the Plan, the completed EEPS Adjustable Savings Goal Template will be used for the remainder of the approved Plan, with annual updates. As specified in Subsection 6.2 & 6.3 of the Policy Manual, Adjustable Savings Goals, Program Administrators will file adjusted energy savings goals reflecting updated IL-TRM values applicable to the Program Year commencing January 1, within sixty (90) days after Commission approval of the annual IL-TRM update. The updated EEPS Adjustable Savings Goal Template will be filed with the Commission to show the adjusted energy savings goals. The Excel versions of the completed and updated EEPS Adjustable Savings Goal Templates will also be posted on the SAG website.

[1] In general, Program Administrators are not expected to meet the individual Measure goals or participation levels specified in the EEPS Adjustable Savings Goal Template.
[2] See Policy Manual Version 3.0, Subsection 7.2, Net-to-Gross Policy.

[illegible]

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[illegible]

Structure-Level Self-Service

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Project		Pre-2010 Energy Use Data										Post-2010 Energy Use Data										Final Adjusted Net Energy Savings Data										Total	
Project ID	Project Name	Pre-2010 Energy Use Data					Pre-2010 Energy Use Data					Post-2010 Energy Use Data					Post-2010 Energy Use Data					Final Adjusted Net Energy Savings Data					Total Energy Savings (MMBtu)	Total Energy Savings (\$)					
		Year	Energy Use (MMBtu)	Energy Use (MMBtu)	Energy Use (MMBtu)	Energy Use (MMBtu)	Year	Energy Use (MMBtu)	Energy Use (MMBtu)	Energy Use (MMBtu)	Energy Use (MMBtu)	Year	Energy Use (MMBtu)	Energy Use (MMBtu)	Energy Use (MMBtu)	Energy Use (MMBtu)	Year	Energy Use (MMBtu)	Energy Use (MMBtu)	Energy Use (MMBtu)	Energy Use (MMBtu)	Year	Energy Use (MMBtu)	Energy Use (MMBtu)	Energy Use (MMBtu)	Energy Use (MMBtu)							
1	1	2010	1	1	1	1	1	2011	1	1	1	1	1	2012	1	1	1	1	1	2013	1	1	1	1	1	2014	1	1	1	1	1	1	1
2	2	2010	2	2	2	2	2	2011	2	2	2	2	2	2012	2	2	2	2	2	2013	2	2	2	2	2	2014	2	2	2	2	2	2	2
3	3	2010	3	3	3	3	3	2011	3	3	3	3	3	2012	3	3	3	3	3	2013	3	3	3	3	3	2014	3	3	3	3	3	3	3
4	4	2010	4	4	4	4	4	2011	4	4	4	4	4	2012	4	4	4	4	4	2013	4	4	4	4	4	2014	4	4	4	4	4	4	4
5	5	2010	5	5	5	5	5	2011	5	5	5	5	5	2012	5	5	5	5	5	2013	5	5	5	5	5	2014	5	5	5	5	5	5	5
6	6	2010	6	6	6	6	6	2011	6	6	6	6	6	2012	6	6	6	6	6	2013	6	6	6	6	6	2014	6	6	6	6	6	6	6
7	7	2010	7	7	7	7	7	2011	7	7	7	7	7	2012	7	7	7	7	7	2013	7	7	7	7	7	2014	7	7	7	7	7	7	7
8	8	2010	8	8	8	8	8	2011	8	8	8	8	8	2012	8	8	8	8	8	2013	8	8	8	8	8	2014	8	8	8	8	8	8	8
9	9	2010	9	9	9	9	9	2011	9	9	9	9	9	2012	9	9	9	9	9	2013	9	9	9	9	9	2014	9	9	9	9	9	9	9
10	10	2010	10	10	10	10	10	2011	10	10	10	10	10	2012	10	10	10	10	10	2013	10	10	10	10	10	2014	10	10	10	10	10	10	10
11	11	2010	11	11	11	11	11	2011	11	11	11	11	11	2012	11	11	11	11	11	2013	11	11	11	11	11	2014	11	11	11	11	11	11	11
12	12	2010	12	12	12	12	12	2011	12	12	12	12	12	2012	12	12	12	12	12	2013	12	12	12	12	12	2014	12	12	12	12	12	12	12
13	13	2010	13	13	13	13	13	2011	13	13	13	13	13	2012	13	13	13	13	13	2013	13	13	13	13	13	2014	13	13	13	13	13	13	13
14	14	2010	14	14	14	14	14	2011	14	14	14	14	14	2012	14	14	14	14	14	2013	14	14	14	14	14	2014	14	14	14	14	14	14	14
15	15	2010	15	15	15	15	15	2011	15	15	15	15	15	2012	15	15	15	15	15	2013	15	15	15	15	15	2014	15	15	15	15	15	15	15
16	16	2010	16	16	16	16	16	2011	16	16	16	16	16	2012	16	16	16	16	16	2013	16	16	16	16	16	2014	16	16	16	16	16	16	16
17	17	2010	17	17	17	17	17	2011	17	17	17	17	17	2012	17	17	17	17	17	2013	17	17	17	17	17	2014	17	17	17	17	17	17	17
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19	19	2010	19	19	19	19	19	2011	19	19	19	19	19	2012	19	19	19	19	19	2013	19	19	19	19	19	2014	19	19	19	19	19	19	19
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Project		Phase 1: Planning & Design										Phase 2: Development & Testing										Phase 3: Deployment & Monitoring										Phase 4: Maintenance & Support										Phase 5: Review & Feedback									
ID	Name	Task 1: Requirements Gathering					Task 2: System Architecture					Task 3: Database Design					Task 4: Frontend Development					Task 5: Backend Development					Task 6: Integration Testing					Task 7: User Acceptance Testing					Task 8: Deployment					Task 9: Monitoring & Support					Task 10: Review & Feedback				
		Start	End	Duration	Progress	Status	Start	End	Duration	Progress	Status	Start	End	Duration	Progress	Status	Start	End	Duration	Progress	Status	Start	End	Duration	Progress	Status	Start	End	Duration	Progress	Status	Start	End	Duration	Progress	Status	Start	End	Duration	Progress	Status										
1	Project A	2023-01-01	2023-01-15	14	100%	Completed	2023-01-16	2023-01-30	14	100%	Completed	2023-01-31	2023-02-15	14	100%	Completed	2023-02-16	2023-02-28	13	100%	Completed	2023-03-01	2023-03-15	14	100%	Completed	2023-03-16	2023-03-30	14	100%	Completed	2023-03-31	2023-04-15	14	100%	Completed	2023-04-16	2023-04-30	14	100%	Completed	2023-05-01	2023-05-15	14	100%	Completed	2023-05-16	2023-05-30	14	100%	Completed
2	Project B	2023-01-01	2023-01-15	14	100%	Completed	2023-01-16	2023-01-30	14	100%	Completed	2023-01-31	2023-02-15	14	100%	Completed	2023-02-16	2023-02-28	13	100%	Completed	2023-03-01	2023-03-15	14	100%	Completed	2023-03-16	2023-03-30	14	100%	Completed	2023-03-31	2023-04-15	14	100%	Completed	2023-04-16	2023-04-30	14	100%	Completed	2023-05-01	2023-05-15	14	100%	Completed	2023-05-16	2023-05-30	14	100%	Completed
3	Project C	2023-01-01	2023-01-15	14	100%	Completed	2023-01-16	2023-01-30	14	100%	Completed	2023-01-31	2023-02-15	14	100%	Completed	2023-02-16	2023-02-28	13	100%	Completed	2023-03-01	2023-03-15	14	100%	Completed	2023-03-16	2023-03-30	14	100%	Completed	2023-03-31	2023-04-15	14	100%	Completed	2023-04-16	2023-04-30	14	100%	Completed	2023-05-01	2023-05-15	14	100%	Completed	2023-05-16	2023-05-30	14	100%	Completed
4	Project D	2023-01-01	2023-01-15	14	100%	Completed	2023-01-16	2023-01-30	14	100%	Completed	2023-01-31	2023-02-15	14	100%	Completed	2023-02-16	2023-02-28	13	100%	Completed	2023-03-01	2023-03-15	14	100%	Completed	2023-03-16	2023-03-30	14	100%	Completed	2023-03-31	2023-04-15	14	100%	Completed	2023-04-16	2023-04-30	14	100%	Completed	2023-05-01	2023-05-15	14	100%	Completed	2023-05-16	2023-05-30	14	100%	Completed
5	Project E	2023-01-01	2023-01-15	14	100%	Completed	2023-01-16	2023-01-30	14	100%	Completed	2023-01-31	2023-02-15	14	100%	Completed	2023-02-16	2023-02-28	13	100%	Completed	2023-03-01	2023-03-15	14	100%	Completed	2023-03-16	2023-03-30	14	100%	Completed	2023-03-31	2023-04-15	14	100%	Completed	2023-04-16	2023-04-30	14	100%	Completed	2023-05-01	2023-05-15	14	100%	Completed	2023-05-16	2023-05-30	14	100%	Completed
6	Project F	2023-01-01	2023-01-15	14	100%	Completed	2023-01-16	2023-01-30	14	100%	Completed	2023-01-31	2023-02-15	14	100%	Completed	2023-02-16	2023-02-28	13	100%	Completed	2023-03-01	2023-03-15	14	100%	Completed	2023-03-16	2023-03-30	14	100%	Completed	2023-03-31	2023-04-15	14	100%	Completed	2023-04-16	2023-04-30	14	100%	Completed	2023-05-01	2023-05-15	14	100%	Completed	2023-05-16	2023-05-30	14	100%	Completed
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Project Overview		Project Details						Project Status				Project Metrics				Project Summary			
Project ID	Project Name	Project Manager	Project Sponsor	Project Lead	Project Owner	Project Stakeholder	Project Description	Project Start Date	Project End Date	Project Duration	Project Progress	Project Budget	Project Cost	Project Revenue	Project Profit	Project Risk	Project Impact		
1	Project A	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project A Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
2	Project B	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project B Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
3	Project C	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project C Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
4	Project D	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project D Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
5	Project E	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project E Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
6	Project F	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project F Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
7	Project G	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project G Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
8	Project H	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project H Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
9	Project I	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project I Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
10	Project J	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project J Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
11	Project K	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project K Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
12	Project L	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project L Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
13	Project M	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project M Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
14	Project N	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project N Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
15	Project O	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project O Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
16	Project P	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project P Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
17	Project Q	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project Q Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
18	Project R	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project R Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
19	Project S	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project S Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
20	Project T	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project T Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
21	Project U	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project U Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
22	Project V	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project V Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
23	Project W	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project W Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
24	Project X	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project X Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
25	Project Y	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project Y Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
26	Project Z	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project Z Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
27	Project AA	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AA Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
28	Project AB	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AB Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
29	Project AC	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AC Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
30	Project AD	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AD Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
31	Project AE	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AE Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
32	Project AF	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AF Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
33	Project AG	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AG Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
34	Project AH	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AH Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
35	Project AI	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AI Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
36	Project AJ	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AJ Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
37	Project AK	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AK Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
38	Project AL	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AL Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
39	Project AM	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AM Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
40	Project AN	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AN Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
41	Project AO	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AO Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
42	Project AP	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AP Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
43	Project AQ	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AQ Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
44	Project AR	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AR Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
45	Project AS	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AS Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
46	Project AT	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AT Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
47	Project AU	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AU Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
48	Project AV	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AV Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
49	Project AW	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AW Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
50	Project AX	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AX Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
51	Project AY	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AY Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
52	Project AZ	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project AZ Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
53	Project BA	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BA Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
54	Project BB	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BB Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
55	Project BC	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BC Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
56	Project BD	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BD Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
57	Project BE	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BE Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
58	Project BF	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BF Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
59	Project BG	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BG Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
60	Project BH	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BH Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
61	Project BI	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BI Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
62	Project BJ	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BJ Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
63	Project BK	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BK Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
64	Project BL	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BL Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
65	Project BM	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BM Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
66	Project BN	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BN Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
67	Project BO	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BO Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
68	Project BP	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BP Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
69	Project BQ	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BQ Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
70	Project BR	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BR Description	2023-01-01	2023-12-31	365	100%	\$1,000,000	\$500,000	\$2,000,000	\$1,500,000	Low	High		
71	Project BS	John Doe	Jane Smith	Mike Brown	Sarah Green	David White	Project BS Description	2023-01-01	2023-12-31	3									

[illegible]

Measure-Level Adjustments

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Roberta L. Grant, *Editor*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Measure Level Adjustment Tab											Annual Savings			Lifetime Savings				
#	Measure	Short Measure Name	Measure Component	Grain dryer type	Crop Type	Measure Life (Yrs)	Incremental Cost	No of bushels	kWh savings/Bushel	Therm Savings/Bushel	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	kWh/yr	therms/yr
4.1.15.1	Grain Dryer Tune Up	Grain Dryer Tune-up	Agriculture	Mixed Flow	Corn	1	\$500.00	73,125	0.00293	0.0049	214.26	0.0000	358.31	214.26	0.0000	358.31	2%	98%

NATURAL GAS SAVINGS
 ΔTherms = total bushels * therms saved/bushel
 Therms saved/bushel = (GDefl * LBH20 removed * thermc% / 100,000) * SF

DEFINITION OF BASELINE EQUIPMENT
 The baseline condition of this measure is a commercial grade grain dryer that has not been tuned-up within the past 12 months.

11,000,000
 29,411.76

Incremental cost \$500.00

Measure Life 1

Grain dryer type	GDefl	kWh/yr	kWh/saved per bushel	therms saved/bushel
Low Temp Bin	1000	100%	0.11723	0
Continuous Mixed Flow	2000	2%	0.00293	0.0049
Mixed Flow	2000	2%	0.00293	0.0049
High Temp Batch	2400	2%	0.00352	0.00588
Continuous Cross-Flow	2400	2%	0.00352	0.00588
Cross-Flow Batch	2500	2%	0.00366	0.00613

Crop type	LBs H2O removed/bushel
Corn	9.10
Soybean	9.94

SF	5%	Savings factor
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Measure Level Adjustment Tab																								
#	Measure	Short Measure Name	Measure Component	Measure Life (Yrs)	Boiler Capacity (Btu)	Pre-Tune Up Boiler Efficiency	Post-Tune Up Boiler Efficiency	Zone 6 (Bicor Custom)	Building Type	Loadshap e	Measure Cost	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	Algorithm Inputs						
4.1.16	Boiler Tune Up, Greenhouse	Boiler Tune Up, Greenhouse	Agriculture	3		1,050	80.3%	82.6%		N/A				1073.87			3221.42	Climate Zone Lookup	Capacity (Btu)	UF	ETpre	ETmeasured	Hours per Year	MBtu to Therms
																		7	1,050	0.415	0.805	0.826	8,766	100
TRM Algorithm																								
ΔTherms = (Capacity * 0.766 * (ETpre/200)) * (1 - (ETpre / ETmeasured))																								
TRM Assumptions																								
Capacity		Custom		Notes Boiler gas input size (Btu)																				
UF		Custom		Custom Table of inputs Utilization Factor																				
ETpre				0.415 Custom For defaults: Table of Lookup values from TRM																				
				Efficiency of the boiler before the tune-up																				
				80.3% Actual Default value is 80.3%																				
ETmeasured				Efficiency of the boiler after the tune-up																				
				82.60% Actual Default value is 82.6%																				
Measure Life		3		Deemed Value from the TRM																				
Baseline Definition		The baseline condition of this measure is a boiler that has not had a tune-up within the past 36 months																						
Efficient Definition		The efficient condition of this measure is a boiler that gets a tune up																						
Table for Algorithm Inputs																								
Utilization Factor Default																								
Zone		Greenhouse with Controls												Greenhouse without Controls										
Zone 1 (Rockford)		0.473												0.476										
Zone 1 (Rockford)		0.445												0.447										
Zone 3 (Springfield)		0.383												0.385										
Zone 4 (Bellevue)		0.328												0.33										
Zone 5 (Marion)		0.321												0.323										

Measure Level Adjustment Tab									Annual Savings			Lifetime Savings		
#	Measure	Short Measure Name	Measure Component	Measure Life (Yrs)	Incremental Cost	Region	Floor Area (Sq. Ft.)	Therm Savings/Sq.Ft.	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
4.1.17.1	Greenhouse Thermal Curtain 6,000 SQ FT	Greenhouse Heat Curtain	Agriculture	5	\$ -	Chicago	6,000	0.361			2,166.00			10,830.00

NATURAL GAS SAVINGS
 ΔTherms = Greenhouse Floor area × Therm Savings per Square Foot

DEFINITION OF BASELINE EQUIPMENT
 The baseline equipment is a greenhouse constructed of PE glazing and no thermal curtain.

Incremental cost

MEASURE LIFE
 5
 The measure lifetime for greenhouse thermal curtains is 5 years.

Greenhouse Floor Area
 Floor Area (Sq. Ft.)
 Actual
 Assumed Floor area for calc. 30000

Therm Savings per Square Foot
 Natural gas savings per square foot for each climate zone

Savings Factor	
Zone	Therm Savings per Square Foot
Rockford	0.394
Chicago	0.361
Springfield	0.325
Belleville	0.317
Marion	0.265

Measure Level Adjustment Tab								Annual Savings				Lifetime Savings		
#	Measure	Short Measure Name	Measure Component	Measure Life (Yrs)	Incremental Cost	Region	Floor Area (Sq. Ft.)	Therm Savings/Sq.Ft.	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
4.1.18.1	Greenhouse Infrared Film 30,000 SQ FT	Greenhouse Infrared Film	Agriculture	5	\$ -	Chicago	30,000	0.232			6,960.00			34,800.00

NATURAL GAS SAVINGS ΔTherms = Greenhouse Floor area x Therm Savings per Square Foot

DEFINITION OF BASELINE EQUIPMENT
 The baseline equipment is a gas-heated greenhouse with PE roof glazing construction and no infrared film.



MEASURE LIFE 5
 The measure lifetime for greenhouse thermal curtains is 5 years.

Greenhouse Floor Area Floor Area (Sq. Ft.)
 Actual Assumed Floor area for calc 30000

Therm Savings per Square Foot Natural gas savings per square foot for each climate zone

Savings Factor	
Zone	Therm Savings per Square Foot
Rockford	0.256
Chicago	0.232
Springfield	0.206
Belleville	0.198
Marion	0.163

[illegible]

$$\Delta T_{\text{water}} = \frac{Q_{\text{water}}}{m_{\text{water}} \cdot c_{\text{water}}} = \frac{1000 \text{ J}}{100 \text{ g} \cdot 4.18 \text{ J/g}^\circ\text{C}} = 2.39^\circ\text{C}$$

[illegible]

Book for Algebraic Impact				
Project Start/End/Estimate				
Date				
City				
State				
County				
Project Name				
Project Description				
Project Location				
Project Status				
Project Budget				
Project Funding				
Project Impact				
Project Risk				
Project Conclusion				
Book for Algebraic Impact				
Project Start/End/Estimate				
Date				
City				
State				
County				
Project Name				
Project Description				
Project Location				
Project Status				
Project Budget				
Project Funding				
Project Impact				
Project Risk				
Project Conclusion				

[illegible][illegible]

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4.2.4										Annual Savings			Lifetime Savings			Savings Calcs		
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Loadshape	Rebate Type		ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	ΔDailyPreheatEnergy	ΔDailyIdleEnergy	ΔDailyCookingEnergy
4.2.4	Conveyor Oven	Large Conveyor Oven, >=25 In	Food service	TOS	12		N/A	N/A				596.23			7,154.79	17,000	21,834.72	124,404.76

TRM Algorithm	
$\Delta \text{Therms} = ((\Delta \text{DailyPreheatEnergy} + \Delta \text{DailyIdleEnergy} + \Delta \text{DailyCookingEnergy}) * \text{Days}) / 100,000$ $\Delta \text{DailyPreheatEnergy} = (\text{PreheatEnergyBase} * \text{Preheats}) - (\text{PreheatEnergyEE} * \text{Preheats})$ $\Delta \text{DailyIdleEnergy} = (\text{IdleRateGasBase} * (\text{Hours} - \text{FoodCooked} / \text{ProductionGasBase} - (\text{Preheats} * \text{PreheatTime} / 60))) - (\text{IdleRateGasEE} * (\text{Hours} - \text{FoodCooked} / \text{ProductionGasBase} - (\text{Preheats} * \text{PreheatTime} / 60)))$ $\Delta \text{DailyCookingEnergy} = (\text{FoodCooked} * \text{EFOODGas} / \text{EffBase}) - (\text{FoodCooked} * \text{EFOODGas} / \text{EffEE})$	
Date	9/22/2026
Measure Code	CI-FSE-CVOV-V03-240101

TRM Assumptions	Input Values	Notes
PreheatEnergyBase	35,000	Preheat energy of baseline gas conveyor oven Actual, if unknown use 35,000 Btu
PreheatEnergyee	18,000	Preheat energy of efficient gas conveyor oven Actual, if unknown use 18,000
Preheats	1	No of preheats per day Actual, if unknown use 1
Hours	12	Average daily hours of operation Actual, if unknown assume 12 hrs
IdleRateGasbase	70,000	Idle energy rate of baseline gas conveyor oven Actual, if unknown use 70,000 Btu/hr
IdleRateGasee	57,000	Idle energy rate of efficient gas conveyor oven Actual, if unknown use 57,000 Btu/hr
Food Cooked	250	Food cooked per day Actual, if unknown use 250 pizzas
PreheatTime	15	Length of one preheat Actual, if unknown use 15 mins
ProductionGasbase	150	Production capacity of baseline gas conveyor oven 150 pizzas/hr
ProductionGasee	220	Production capacity of efficient gas conveyor oven Actual, if unknown use 220 pizzas/hr
EFOODGas	190	ASTM energy to food for gas oven 190 Btu/pizza
Effbase	20%	Cooking efficiency of baseline conveyor oven Actual, if unknown use 20%
Effee	42%	Cooking efficiency of efficient conveyor oven Actual, if unknown use 42%
Measure Life	12	This is a deemed TRM Value
No of days	365	Annual days of kitchen operation Actual, if unknown assume 365.25
Incremental Cost		
Baseline Definition		The baseline equipment is an existing pizza deck oven at end of
Efficient Definition		To qualify for this measure the installed equipment must be a

Measure Level Adjustment Tab						Annual Savings				Lifetime Savings					
#	Measure	Short Measure Name	Measure Com	Program Type	Measure Life (Yrs)	Incremental Cost	Cost source	Rebate Type	Loadshape	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
4.2.5	MEASURE ENERGY STAR Convection Oven	Convection Oven, E >46%	Food service	TOS	12				N/A			209.35			2,512.17
TRM Algorithm															
ΔTherms = (ΔDailyIdle Energy + ΔDailyPreheat Energy + ΔDailyCooking Energy) * Days /100,000															
ΔDailyIdleEnergy = (IdleBase* IdleBaseTime)- (IdleENERGYSTAR * IdleENERGYSTARTime)															
ΔDailyCookingEnergy = ((LB * EFOOD/ EffBase) - ((LB * EFOOD/ EffENERGYSTAR)															
ΔDailyPreheatEnergy =(PreheatNumber*PreheatTimeBase/60*PreheatRateBase)-(PreheatNumber * PreheatTimeENERGYSTAR/60 * PreheatRateENERGYSTAR)															
Date		9/22/2026													
Measure Code		CI-FSE-ESC-V-VID-250101													
TRM Algorithm															
ΔDailyIdleEnergy														45,068	
ΔDailyPreheat Energy														7,133	
ΔDailyCookingEnergy														5,115	
TRM Assumptions															
Input Values		Notes													
HOURSday		12 Average Daily Operation (Hrs) custom or if unknown, use TRM Value of 12 hours													
Days		365.25 Annual days of operation custom or if unknown, use TRM Value of 365.25 days a year													
LB		100 Food cooked per day custom or if unknown, use 100 pounds for gas oven													
EffENERGYSTAR		52% Cooking Efficiency ENERGY STAR TRM deemed value													
EffBase		47% Cooking Efficiency Baseline TRM deemed value													
PCENERGYSTAR		90 Production Capacity ENERGY STAR (lbs/hr) TRM deemed value													
PCBase		93 Production Capacity base TRM deemed value													
PreheatNumberENERGYSTAR		1 Number of preheats per day custom or if unknown, use TRM Value of 1													
PreheatNumberBase		1 Number of preheats per day custom or if unknown, use TRM Value of 1													
PreheatTimeENERGYSTAR		11 preheat length (mins) TRM deemed value													
PreheatTimeBase		12 preheat length (mins) TRM deemed value													
PreheatRateENERGYSTAR		44,000 preheat energy rate high efficiency (btu/h) TRM deemed value													
PreheatRateBase		76,000 preheat energy rate baseline TRM deemed value													
IdleENERGYSTAR		8,027 Idle energy rate (btu/h) TRM deemed value													
IdleBase		12,239 Idle energy rate (btu/h) TRM deemed value													
IdleENERGYSTARTime		ENERGY STAR Idle Time (Hrs) HOURSday-LB/PCENERGYSTAR –PreHeatTimeENERGYSTAR/60 10.7 TRM deemed value													
IdleBaseTime		BASE Idle Time HOURSday-LB/PCBase –PreHeatTimeBase/60 10.7 TRM deemed value													
EFOOD		250 ASTM energy to food (btu/lb) TRM deemed value													
Measure Life		12 TRM deemed value													
Incremental Cost															
Baseline Definition		The baseline equipment is a natural gas convection oven that is not ENERGY STAR certified and is at end of life.													
Efficient Definition		To qualify for this measure the installed equipment must be a natural gas convection oven with a cooking efficiency ≥ 44% utilizing ASTM													

[illegible]

4.2.7	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Loadshape	Rebate Type	Annual Savings			Lifetime Savings		
4.2.7	ENERGY STAR Fryer	Fryer - E >50%	Food service	TDS	12	\$0.00	N/A		ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms

TRM Algorithm	
$\Delta \text{Therms} = (\Delta \text{DailyIdleEnergy} + \Delta \text{DailyPreheatEnergy} + \Delta \text{DailyCookingEnergy}) * \text{Days} / 100,000$ $\Delta \text{DailyIdleEnergy} = (\text{GasIdleBase} * ((\text{HOURS} - (\text{PreheatTime}/60)) - (\text{LB}/(\text{GasPCBase})) - (\text{GasIdleESTAR} * ((\text{HOURS} - (\text{PreheatTime}/60)) - (\text{LB}/(\text{GasPCESTAR}))))$ $\Delta \text{DailyPreheatEnergy} = (\text{PreheatEnergyBase} - \text{PreheatEnergyESTAR}) * 1,000$ $\Delta \text{DailyCookingEnergy} = (\text{LB} * \text{EFOODGas} / \text{GasEBase}) - (\text{LB} * \text{EFOODGas} / \text{GasPRESTAR})$	
Date	9/22/2026
Measure Code	CLFSE-ESTAR-FDS-250201

Additional TRM Algorithm			
	ΔBTU	Standard Fryer	
		Baseline BTU	Efficient BTU
ΔDailyIdleEnergy	64,519.73	185,500.00	120,980.77
ΔDailyPreheatEnergy	2,500.00	18,500	16,000
ΔDailyCookingEnergy	73,285.71	244,285.71	171,000.00

TRM Assumptions	Input Values	Notes	Origin	Application Field
HOURSday	16	Average Daily Operation custom or if unknown, use TRM Value of 16 hours	TRM Deemed - value directly from TRM	
Days	365.25	Annual days of operation custom or if unknown, use TRM Value of 365.25 days a year	TRM Deemed - value directly from TRM	
LB	150	Food cooked per day custom or if unknown, use TRM Value of 150 pounds	TRM Deemed - value directly from TRM	
GasIdleBase (Btu/hr)	14,000.00 Standard 18,000.00 Large Vat	Idle energy rate of baseline gas fryer	TRM Deemed - value directly from TRM	
GasIdleESTAR (Btu/hr)	9,000.00 Standard 12,000.00 Large Vat	Idle energy rate of ENERGY STAR gas fryer	TRM Deemed - value directly from TRM	
GasPCBase (lb/yr)	60.00 Standard 100.00 Large Vat	Production capacity of baseline gas fryer	TRM Deemed - value directly from TRM	
GasPCESTAR (lb/yr)	65.00 Standard 110.00 Large Vat	Production capacity of ENERGY STAR gas fryer	TRM Deemed - value directly from TRM	
PreheatEnergyBase (Btu)	18500	Preheat energy rate of baseline gas fryer	TRM Deemed - value directly from TRM	
PreheatEnergyESTAR (Btu)	16000	Preheat energy rate of ENERGY STAR gas fryer	TRM Deemed - value directly from TRM	
PreheatTime	15	preheat length Baseline and ESTAR (mins) Actual, if unknown use 16,000 Btu/hr custom or if unknown, use TRM Value of 15 minutes	TRM Deemed - value directly from TRM	
GasEBase	35%	Cooking efficiency of baseline gas fryer Same for standard & Large Vat fryers	TRM Deemed - value directly from TRM	
GasPRESTAR	50%	Cooking efficiency of ENERGY STAR gas fryer Same for standard & Large Vat fryers	TRM Deemed - value directly from TRM	
EFOOD	570.0	ASTM energy to food (btu/lb) Deemed TRM Value of 570 btu/pound	TRM Deemed - value directly from TRM	
Measure Life	12	Deemed TRM Value	TRM Deemed	
Incremental Cost		Standard Large Vat	TRM Deemed	
Baseline Definition		The baseline equipment is a natural gas fryer that is not ENERGY STAR certified at end of life.		
Efficient Definition		To qualify for this measure the installed equipment must be a natural gas fryer with a heavy load cooking		

												Annual Savings		Lifetime Savings	
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Grid/Le Fuel	Location	Incremental Cost	Load/Space	Rebate Type	\$/kWh	\$/kW	\$/kVA	\$/kW	\$/kW
4.2.8	ENERGY STAR Grid/Le	Grid/Le	Food service	TDS	12	Natural Gas	Fast Food Expanded Menu		C01-Commercial Electric				148.64		1,781.70

```

RM Algorithm
dawn = (Jedis Energy + dPreheat Energy + dCooling Energy) * Days / 10000

[CalcJedisEnergy = (dJedis * Width * Depth * (HOURSday - dJd * PkSec * Width * Depth) - (PreheatNumberBase * PreheatTimeBase / 60)) / ((dENERGYSTAR * Width * Depth * (HOURSday - dJd * PkENERGYSTAR * Width * Depth) - (PreheatNumberENERGYSTAR * PreheatTimeENERGYSTAR / 60))
[CalcPreheatEnergy = (PreheatNumberBase * PreheatTimeBase / 60 * PreheatRateBase * Width * Depth) - (PreheatNumberENERGYSTAR * PreheatTimeENERGYSTAR / 60 * PreheatRateENERGYSTAR * Width * Depth)
[CalcCoolingEnergy = (Ld * EPOOD / EffBase) - (Ld * EPOOD / EffRateENERGYSTAR)
dW = dAWN * Hours * 12
Schemas = (Jedis Energy + dPreheat Energy + dCooling Energy) * Days / 100000

[CalcJedisEnergy = (dJedis * Width * Depth * (HOURSday - dJd * PkSec * Width * Depth) - (PreheatNumberBase * PreheatTimeBase / 60)) / ((dENERGYSTAR * Width * Depth * (HOURSday - dJd * PkENERGYSTAR * Width * Depth) - (PreheatNumberENERGYSTAR * PreheatTimeENERGYSTAR / 60))
[CalcPreheatEnergy = (PreheatNumberBase * PreheatTimeBase / 60 * PreheatRateBase * Width * Depth) - (PreheatNumberENERGYSTAR * PreheatTimeENERGYSTAR / 60 * PreheatRateENERGYSTAR * Width * Depth)
[CalcCoolingEnergy = (Ld * EPOOD / EffBase) - (Ld * EPOOD / EffRateENERGYSTAR)

```

Date	9/22/2026
Measure Code	CI-FSE-FSGR-V02-250101

Additional TRM Algorithm			
	$\Delta\Delta Wh$	$\Delta\Delta Thrms$	
$\Delta DailyIdleEnergy$	3,582.86	11,258.33	
$\Delta DailyPreheatEnergy$	2,000.00	6,000.00	
$\Delta DailyCookingEnergy$	1,527.47	23,437.50	

TRM Assumptions	Input Values	Input Values	Notes
	ASAP	ATHEMIS	
HOURS/day	12		Average Daily Operation custom or if unknown, use TRM Value of 12 hours
Cover	360.25		Annual days of operation custom or if unknown, use TRM Value of 365.25 days a year
lb	100		Food cooked per day (lb) portion or if unknown, use TRM Value of 100 pounds; For dual fuel systems assume half electric and half gas or if unknown, use 50 pounds for electric and 50 pounds for gas
Width	3		Griddle Width (ft) custom or if unknown, use TRM Value of 3 feet
Depth	2		Griddle Depth (ft) custom or if unknown, use TRM Value of 2 feet
FFENERGYSTAR	70%		38% Cooking Efficiency ENERGY STAR custom or if unknown, use TRM Value for gas of 38%
FCBSE	65%		32% Cooking Efficiency Baseline custom or if unknown, use TRM Value for gas of 32%
FCENERGYSTAR	6.67		7.5 Production Capacity ENERGY STAR (lb/hr) custom or if unknown, use TRM Value of 7.5 pounds/hr./sq ft
FCBSE	5.83		4.17 Production Capacity Base (lb/hr) custom or if unknown, use TRM Value of 4.17 pounds/hr./sq ft
PreheatNumberENERGYSTAR	1		Number of preheats per day custom or if unknown, use TRM Value of 1 For dual fuel systems assume half electric and half gas or if unknown, use .5 for electric and .5 for gas
PreheatNumberBase	1		Number of preheats per day custom or if unknown, use TRM Value of 1, For dual fuel systems assume half electric and half gas or if unknown, use .5 for electric and .5 for gas
PreheatTimeENERGYSTAR	15		preheat length (mins) custom or if unknown, use TRM Value of 15 minutes
PreheatTimeBase	15		preheat length (mins) custom or if unknown, use TRM Value of 15 minutes
PreheatRateENERGYSTAR	1,333		10,000 preheat energy rate high efficiency (Electric) custom or if unknown, use TRM Value of 10000 btu/hr./sq ft preheat energy rate baseline (Electric= W/eq ft) (gas= btu/hr./sq)
PreheatRateBase	2,667		14,000 preheat energy rate baseline (Electric= W/eq ft) (gas= btu/hr./sq)
IdleENERGYSTAR	320		2,650 side energy rate (Electric= W/eq ft) custom or if unknown, use TRM Value of 2650 btu/hr./sq ft
IdleBase	400		3,500 side energy rate (Electric= W/eq ft), (Gas= btu/hr./sq ft) custom or if unknown, use TRM Value of 3500 btu/hr./sq ft
FOOD	139		475 ASTM energy to food (Electric= w-ft), (Gas= btu-ft) Deemed TRM Value for 475 for gas and 139 for electric
Measures Life Incremental Cost	12		1.2 Deemed TRM Value

Baseline Definition	The baseline equipment is an existing natural gas or electric grill that is not ENERGY STAR certified and is at end of use.
Efficient Definition	To qualify for this measure the installed equipment must be an ENERGY STAR natural gas or electric grill with a heavy load cooking energy efficiency of 70 percent (electric) or 38 percent (gas), greater and an idle energy rate of 2,600 Btu/hr per square foot of cooking surface or less, unless ASTM I2275. The grill must have an Idle Energy Consumption Rate < 2,600 Btu/hr per square foot cooking surface.

Table for Algorithm Inputs	
Coincidence Factor	0.9

Inputs Table
Electric
Natural Gas

[illegible]

F.12.12					Annual Savings										Lifetime Savings					Algorithm Inputs									
F.	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Loadshare	Rebate Type	ΔkW	ΔkW	ΔThermal	ΔkW	ΔkW	ΔThermal	ΔPreheatsave	ΔCoolingsave	Days	PreheatsaveLoad	PreheatsaveRate	Preheat	Algorithm Type	InputScale	InputScale	Duty	Hours	Conversion Factor: Btu to \$/Btu	Conversion Factor: Minutes to hours		
F.12.12	Measure	Infrared Chiller	Food service	TOS	12	N/A	N/A	Upstream	706.68			6,480.16			2,500	234,000	312	64,000	54,000	1	15	140,000	105,000	0.8	8	100,000	60		
F.12.12.1	Infrared Chiller Upstream	Infrared Chiller Upstream	Food service	TOS	12	N/A	N/A	Upstream	706.68			6,480.16			2,500	234,000	312	64,000	54,000	1	15	140,000	105,000	0.8	8	100,000	60		

Date	9/22/2026
Measure Code	CI-FSE-INC8-VD4-250101

TSM Algorithms

$$\Delta \text{Therms} = \frac{(\Delta \text{PreheatEnergy} + \Delta \text{CookingEnergy}) \cdot \text{Days}}{100,000}$$

[illegible]

4.2.13									Annual Savings			Lifetime Savings			Algorithm Inputs					Conversion
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Loadshape	Rebate Type	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	InputRateBase	InputRateFee	Duty	days	hrs/day	Factor: Btu to therm
4.2.13	Rotisserie Oven	Rotisserie Oven	Food service	TOS	12		N/A				599.04	-	-	7,188.48	90,000	50,000	60%	312	8	100,000
4.2.13.3	Rotisserie Oven Upstream	Rotisserie Oven Upstream	Food service	TOS	12		N/A	Upstream			599.04	-	-	7,188.48	90,000	50,000	60%	312	8	100,000

Date	10/15/2021
Measure Code	CH-SE-SF-NY-1002-2020

TRM Algorithm	
$r_{TMS} = \frac{(InputRate_{Base} - InputRate_{Eff}) * Duty * Days * HoursDay}{100,000}$	

TRM Assumptions	Input Values	TRM Description/Notes
InputRateBase	90,000	Energy input rate of baseline rotisserie oven (Btu/hr) Value per TRM: Custom or if unknown, use 90,000 Btu/hr
InputRateFee	50,000	Energy input rate of efficient rotisserie oven (Btu/hr) Per TRM: Custom or if unknown, use 50,000 Btu/hr
Duty	60%	Duty cycle of rotisserie oven (%) Per TRM: Custom or if unknown, use 60%
Days	312	Days per year rotisserie oven in operating Custom, if unknown assume 312 (6 days/wk * 52 wks/yr)
Hours/day	8	Typical daily operating hours of rotisserie oven Custom, if unknown assume 8 hrs per day
Conversion Factors		conversion factors
	100,000	Btu to therms conversion factor
Incremental Cost		
Measure Life	12	The expected measure life is assumed to be 12 Years This is per the TRM

Measure-Level Adjustments' 1651

4.2.14 Infrared Salamander Broiler																				
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Loadshape	Rebate Type	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	InputRatebase	InputRateee	Duty	Days/Yr	Hrs/day	Conversion Factor: Btu to therm
4.2.14	Infrared Salamander Broiler	Infrared Salamander Broiler	Food service	TOS	12		N/A				240.24			2,882.88	38,500	24,750	70%	312	8	100,000
4.2.14.3	Infrared Salamander Broiler Upstream	Infrared Salamander Broiler Upstream	Food service	TOS	12		N/A	Upstream			240.24			2,882.88	38,500	24,750	70%	312	8	100,000

Date	9/22/2026
Measure Code	CI-FSE-IRBL-V02-180101

TRM Algorithm

$$\Delta \text{Therms} = \frac{(\text{InputRate}_{\text{base}} - \text{InputRate}_{\text{EE}}) \times \text{Duty} \times \text{Days} \times \text{HoursDay}}{100,000}$$

TRM Assumptions	Input Values	TRM Description Notes
InputRatebase	38,500	Rate energy input rate of baseline salamander broiler (Btu/hr) Value per TRM: 38,500 Btu/hr
InputRateee	24,750	Rated energy input rate of infrared salamander broiler (Btu/hr) Per TRM: Custom or if unknown, use 24,750 Btu/hr
Duty	70%	Duty cycle of salamander broiler (%) Per TRM: Custom or if unknown, use 70%
Days	312	Days per year rotisserie oven in operating Custom, if unknown assume 312 (6 days/week * 52 wks/yr)
Hours/day	8	Typical daily operating hours of rotisserie oven Custom, if unknown assume 8hrs per day
Conversion Factors		conversion factors
Incremental Cost	100,000	Btu to therms conversion factor
Measure Life	12	The expected measure life is assumed to be 12 Years This is per the TRM

Measure Level Adjustment Tab

4.2.15									Annual Savings			Lifetime Savings			Algorithm Inputs					
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Loadshape	Rebate Type	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	InputRatebase	InputRateee	Duty	Days/yr	Hrs/day	Conversion Factor: Btu to therm
4.2.15	Infrared Upright Broiler	Infrared Upright Broiler	Food service	TOS	12		N/A				943.43			11,321.86	144,000	90,000	70%	312	8	100,000
4.2.15.3	Infrared Upright Broiler Upstream	Infrared Upright Broiler Upstream	Food service	TOS	12		N/A	Upstream			943.43			11,321.86	144,000	90,000	70%	312	8	100,000

Date	9/22/2026
Measure Code	CF-PSE-IRUB-V02-180101

TBM Algorithm

$$\Delta \text{Therms} = \frac{(\text{InputRate}_{\text{Base}} - \text{InputRate}_{\text{EE}}) \times \text{Duty} \times \text{Days} \times \text{Hours/Day}}{100,000}$$

TBM Assumptions	Input Values	TBM Description Notes
InputRatebase	144,000	Rate energy input rate of baseline upright broiler (Btu/hr) Value per TRM: 144,000 Btu/hr
InputRateee	90,000	Rated energy input rate of infrared upright broiler (Btu/hr) Per TRM: Custom or if unknown, use 90,000 Btu/hr
Duty	70%	Duty cycle of upright broiler (%) Per TRM: Custom or if unknown, use 70%
Days	312	Days per year rotisserie oven in operating Custom, if unknown assume 312 (6 days/wk * 52 wks/yr)
Hours/day	8	Typical daily operating hours of rotisserie oven Custom, if unknown assume 8hrs per day
Conversion Factors		conversion factor
Incremental Cost	100,000	Btu to therms conversion factor
Measure Life	12	The expected measure life is assumed to be 12 Years This is per the TRM

#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Measure Category	Climate Zone	Incremental Cost	Loadshape	Annual Savings			Lifetime Savings			Algorithm Inputs			
										ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	CFM	HP	Annual Heating Load	Eff(heat)
4.2.16	Kitchen Demand Ventilation Controls	Kitchen Demand Ventilation Controls	Controls	TOS	20	DVC Control Retrofit	2 (Chicago)		C23- Commercial Ventilation			2,058.57	-	-	41,171.34	430	9.65	39688	80%
4.2.16.2	Kitchen Demand Ventilation Controls - Public Sector	Kitchen Demand Ventilation Controls - Public Sector	Controls	TOS	20	DVC Control New	6 (Nicor Custom)		C23- Commercial Ventilation			2,134.95	-	-	42,698.98	430	9.65	41160.6	80%

ΔTherms = CFM * HP * Annual Heating Load / (Eff(heat) * 100,000)			
ΔkWh	4,423 * HP		TRM algorithm
ΔkW	0.551 * HP		TRM algorithm
CFM	430	CFM/HP	The average airflow reduction with ventilation controls per hood (430 CFM/HP)
HP	9.65	HP	TRM default value (unknown) Use actual, if unknown default = 9.65HP
Annual Heat Load	see table below	btu/cfm	Annual heating energy required to heat fan exhaust make-up air, Btu/cfm dependent on location
Eff(heat)	80%	AFUE	Heating Efficiency actual if known, otherwise assume 80%

Measure Category	Incremental Cost, \$/HP of fan	Annual Energy Savings/ Unit (kWh/fan)	Coincident Peak Demand Reduction (kW)
DVC Control Retrofit	\$1,992	47,922	6.562
DVC Control New	\$1,180	47,922	6.562

Zone	Annual Heating Load, Btu/cfm
1 (Rockford)	46627
2 (Chicago)	39688
3 (Springfield)	33597
4 (Belleville)	20991
5 (Marion)	22128
6 (Nicor Custom)	41160.6

Measure Level Adjustment Tab

4.2.17									Annual Savings			Lifetime Savings		
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Loadshape	Rebate Type	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
4.2.17	Pasta Cooker	Pasta Cooker	Food service	TOS	12		N/A				1,380.00			16,560.00
4.2.17.3	Pasta Cooker Upstream	Pasta Cooker Upstream	Food service	TOS	12		N/A	Upstream			1,380.00			16,560.00

TRM Assumptions		Input Values	Notes
Measure life		12	This is a deemed TRM Value
Incremental Cost			
Therm Savings		1380	This is a deemed TRM value equaling 1089 Therms
Date		9/22/2026	
Measure Code		CI-FSE-PCDK-V02-180101	

Measure Level Adjustment Tab

4.2.18	Rack Oven - Double Oven									Annual Savings		Lifetime Savings		
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Loadshape	Rebate Type	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
4.2.18	Rack Oven - Double Oven Rack Oven - Double	Rack Oven - Double	Food service	TOS	12		N/A				585			7,025.44
4.2.18.1	Rack Oven - Single	Rack Oven - Single	Food service	TOS	12		N/A				0			-

Date	9/22/2026
Measure Code	CI-FSE-RKOV-V04-240101

TRM Algorithm

$$\Delta Therms = \Delta DailyPreheatEnergy + \Delta DailyIdleEnergy + \Delta DailyCookingEnergy) * Days/100,000$$

$$\Delta DailyPreheatEnergy = DailyPreheats * (PreheatEnergyBase - PreheatEnergyEE)$$

$$\Delta DailyIdleEnergy = (IdleRateBase * (Hours - \frac{LB}{PCE} - \frac{DailyPreheats * PreheatTime}{60})) - (IdleRateEE * (Hours - \frac{LB}{PCE} - \frac{DailyPreheats * PreheatTime}{60}))$$

$$\Delta DailyCookingEnergy = (\frac{LB * EF000}{E/EE}) - (\frac{LB * EF000}{E/EE})$$

TRM Algorithm	
ΔDailyIdleEnergy	86,578
ΔDailyPreheatEnergy	24,341
ΔDailyCookingEnergy	49,370

TRM Assumptions	Input Values	TRM Description Notes
Days	365	No of days/yr
DailyPreheats	1	No of preheats per day Actual, if unknown use 1
PreheatEnergyee	65,758	Preheat energy of energy efficient rack oven – double oven Actual, if unknown use 65,768 Btu
PreheatEnergybase	90,099	Preheat energy of baseline rack oven – double oven Actual, if unknown use 90,009 Btu
IdleRateEE	24,600	Idle rate of energy efficient rack oven – double oven Actual, if unknown use 24,600 Btu/hr
IdleRateBase	36,909	Idle rate of baseline rack oven – double oven Actual, if unknown use 36,909 Btu/hr
LB	1,200	Pounds of food cooked per day Actual, if unknown use 1,200 lb/day
Pcee	279	Production capacity of energy efficient rack oven – double oven Actual, if unknown use 279 lb/hr
Pcbase	272	Production capacity of baseline rack oven – double oven Actual, if unknown use 272 lb/hr
PreheatTime	20	Length of a single preheat Custom; or if unknown, 20 minutes
Efood	235	ASTM ENERGY to food ratio, the ENERGY absorbed by food during cooking
Efee	56%	Cooking efficiency of energy efficient rack oven – double oven Custom, if unknown use 56%
Efbase	51%	Cooking efficiency of baseline rack oven – double oven Custom, if unknown use 51%
Hours	12	Average daily hours of operation Custom, if unknown use 12 hrs
Conversion Factors	60	mins to hour
Incremental Cost	100,000	Btu to therms conversion factor
Measure Life	12	The expected measure life is assumed to be 12 Years This is per the TRM

[illegible]

Annual report details																							
Measure	Facilities Water Meter	Short Measure Name	Measure Component	Est Type	Program Tag	Measure Life (Yrs)	Output (Gallons at Life 1%)	Existing Input (Gallons at Life 1%)	New Standby Loss (Gallons)	Reduces Type	Estimated Cost	Annual Savings				Lifetime Savings				Totals			
												Water	Electric	Gas	Other	Water	Electric	Gas	Other	Total Dollars	Measure Life	Total Cost	
												Water	Electric	Gas	Other	Water	Electric	Gas	Other	Water	Electric	Gas	Other
6.3.4	Facilities Water Meter #F_75,000 kcu/h	Facilities #F-200kcu/h	Water meter	G+1	W	20.00	50	75,000	NA	\$	100 Commercial Electric Data	21,965.00	-	\$0.00	-	\$0.00	-	\$0.00	-	\$0.00	-	\$0.00	-
6.3.5	Facilities Water Meter #F_200,000 kcu/h	Facilities #F= 200 kcu/h	Water meter	G+1	W	20.00	50	200,000	NA	\$	100 Commercial Electric Data	21,965.00	-	\$0.00	-	\$0.00	-	\$0.00	-	\$0.00	-	\$0.00	-

TRM Algorithm

[illegible]

Table for Algorithm Inputs						
Electric				Gas		
Output (Input) at delta T %	Incremental Cost	2020	2030	Program		
10	\$0.002	\$0.001	\$0.001			
20	\$0.004	\$0.002	\$0.002			
30	\$0.006	\$0.003	\$0.003			
40	\$0.008	\$0.004	\$0.004			
50	\$0.010	\$0.005	\$0.005			
60	\$0.012	\$0.006	\$0.006			
70	\$0.014	\$0.007	\$0.007			
80	\$0.016	\$0.008	\$0.008			
90	\$0.018	\$0.009	\$0.009			
100	\$0.020	\$0.010	\$0.010			

Input for calculation	Input: kWh of cooling, indirect water heater	Eff base	Units	Tank Volume [gal]	%
Feet0	0.75,000 kWh, x30 gal and x10 gal	0.975	Energy factor	50	100%
Feet0	0.75,000 kWh, x10 gal and x100 gal	0.7540	Energy factor	60	100%
1,000,000	175,000 kWh and a 175,000 kWh	0.0%	Recovery efficiency	75	100%
	175,000 kWh	0.0%	Recovery efficiency	150	100%

TCG
RF
CR

	Appliance Type	Sub Category	Drive Pattern	Relative Frequency, Relative Power (approx)
70000	Residential Gas Instantaneous Water Heaters (147)	<2 gal	Very Slow	5%
	< 2000 (0.001) kWh			0.0%
100000	Residential Electric Instantaneous Water Heaters (148)	<2 gal	Slow	10%
	< 2000 (0.001) kWh			0.0%
	Residential Electric Instantaneous Water Heaters	1.0-1.9 gal and 2.0-4.9 gal	Mid	50% + 15%
				0.0% + 10%
	Residential Gas Commercial	> 1.9 gal and 5.0 gal and 4.0-6.9 gal	Mid	0.0% + 10%
	Electric Commercial Water Heaters			0.0% + 10%

[1] All Residential sized Federal Standards are from DOE Standard 10 CFR 430. Residential Duty and Commercial Federal Standard are from DOE Standard 10 CFR 431.

[illegible]

[illegible]

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%%M Algorithm
iN0N = %N2mch(DH) * (GPM_base * i_base - GPM_low * i_low) * N0P0 * 305.25) * EPG_electr * GR
iLV = %dW0N/Hours * CF
iTherm = %N2mch(EHR) * (GPM_base * i_base - GPM_low * i_low) * N0P0 * 305.25) * EPG_gas * GR
iSolute = (GPM_base * i_base - GPM_low * i_low) * N0P0 * 305.25 * R0
iLV = 9.722e-05

```

Input Assumptions	Input Values	Notes
Electricity Demand		proportion of water heating supplied by electric resistance heating
Electricity Price	\$0.16/kWh	Determined TRM value of electricity; IF Fossil Fuel Output Discount = 0%
DTM_base	2.0°F	Base value of the baseline downstream This is a Derived TRM Value
DTM_min	Table of TRM values below	Air-cooled flow rate of the base flow downstream TRM goes up if losses for permeation valves, 1.5, 1.75, 2. Table of these values are in the TRM - Table of values for calculation is below
C_flow	1.0	Downer length increases with baselines downstream This is a Derived TRM Value
C_size	6.2	Downer length increase with baselines downstream This is a Derived TRM Value
KSTD	1	Estimated number of showers taken per day for one showerhead Note: this is an assumption. The value of 1.4-1 given by the TRM
ETC_electric	0.18	Calculation of energy per gallon of hot water required by electric Where the TRM calculations are: $(0.25 \times 7.5) / (\text{downer_flow} \times \text{supply_temp}) / (PC_{elec} \times 100)$ Where this TRM calculation is: $(0.18 \times 1.5 + 0.09 \times 1.5 + 0.09 \times 1.5) \times 100 \times 100 = 90.9141$ Calculation value from the TRM is 12.7764/gal Where 0.25 is a value from the TRM Specific weight of water (lb/gallon) Where 1.5 is a value from the TRM Hot Capacity of water (Btu/lb°F) Determined TRM Value for Shower/Footer = Estimated temperature of water = 100° Determined TRM Value for Supply/Tank = Assumed temperature of water entering house = 54.1°F Determined TRM Value for PC_electric = Recovery efficiency of electric water heater= 90% 9412 = Converts Btu to kWh (Btu/kWh)
ETS	98%	In service ratio of showerhead This is a Derived TRM Value
SHR		Proportion of water heating supplied by electric resistance heating Determined TRM value for Electric Resistance Heating = 98% (water heated by electric)
SHR_elec		Annual electric SHWR recovery from the showerhead use Calculation example from the TRM ($\text{DSHR}_{base} = 1$, $\text{base_TDRM} = 0.05, 25.1 \times 0.008 / 50\%$) 0.008 = The TRM Design Gallons Heat Recovery of electric water heater calculated at 20 min time (100 L x 1.98% recovery efficiency, and liquid @ 1500 electric resistance storage tank = 27.51) Where DS_HV is 77.3% is the proportion of hot L20F water mixed with 50.7 PF supply water to the 100°F shower water. This is a Derived TRM Value
CF	0.0278	Combined Factor for electric load reduction This is a Derived TRM Value
electricEmit		proportion of water heating supplied by fossil fuel heating Determined TRM value based on the TRM values of Electric, DTS and IF Fossil Fuel Input, 100%, of carbon, 44%
ETC_gas	0.006	Energy per gallon of the water required by gas Where the TRM calculations are: $(0.25 \times 7.5) / (\text{downer_flow} \times \text{supply_temp}) / (PC_{gas} \times 100, 0.006)$ Where the TRM Designs the T-E_gas = Recovery efficiency of gas water heater = 47% 100,000 = Converts Btu to Therms (Btu/Therm - from the TRM)
Measure life incremental cost		This is a Derived TRM Value

[illegible]

4.3.4 Commercial Pool Covers										Annual Savings				Lifetime Savings				Algorithm Inputs	
#	Measure	Short Measure Name	Measure Component	Measure Life (Yrs)	Incremental Cost	Incremental Cost Source	Loadshape	Location	Ave. Pool Size	ΔKWh	ΔkW	ΔTherms	Δgallons	ΔKWh	ΔkW	ΔTherms	Δgallons	Savings Factor	Water Savings Factor
4.3.4.1	Commercial Pool Covers, per 1,000 sf, Indoor	Indoor Pool Covers	Water heater	6			CO2-Commercial Electric DHW	Indoor	1,000.00			2,610.00	15,280.00			15,660.00	91,680.00	2.610	15.28
4.3.4.2	Commercial Pool Covers, per 1,000 sf, Outdoor	Outdoor Pool Covers	Water heater	6			CO2-Commercial Electric DHW	Outdoor	1,000.00			1,010.00	8,940.00			6,060.00	53,640.00	1.010	8.94

TRM Algorithm	
ΔTherms = SavingFactor x Size of Pool	
Δgallons = WaterSavingFactor x Size of Pool	
Date	9/27/2026
Measure Code	CHWE-PLCY-W06-250101

TRM Assumptions	Input Values	Notes
Savings Factor		dependent on pool location and is part of table of deemed TRM values based on location
Size of pool		Custom Input, for planning values assuming a value of 1,000 sq-ft
WaterSavingFactor	Table of Values from the TRM listed below	Water savings for this measure dependent on pool location and is part of table of deemed TRM values based on location
Measure Life		6 Deemed TRM Value: The useful life of this measure is assumed to be 6 years
Incremental Cost		
Baseline Definition		For indoor pools, the base case is an uncovered indoor pool that operates all year. For outdoor pools, the base case is an outdoor pool that is uncovered and is open through the summer season.
Efficient Definition		For indoor pools, the efficient case is the installation of an indoor pool cover with a 5 year warranty on an indoor pool that operates all year. For outdoor pools, the efficient case is the installation of an outdoor pool cover with a 5 year warranty on an outdoor pool that is open through the summer season.

Table for Algorithm Inputs				
	Incremental Cost Table		Edge Style	
	Cover Size (sq. ft.) greater than		Hemmed	Weighted
		Indoor	Outdoor	
	1		\$2.19	\$2.24
	1000		\$2.19	\$2.24
	2000		\$2.01	\$2.06
	3000		\$1.80	\$1.83
	Average		\$2.00	\$2.04
	Lookup Table for Incremental Cost			
	Indoor	TRM		
Outdoor	Custom			
Savings factor = dependent on pool location and listed in table below				
Location (Chicago)		Therm / sq-ft		
Indoor		2.61		
Outdoor		1.01		
WaterSavingFactor = Water savings for this measure dependent on pool location and listed in table below.				
Location (Chicago)		Annual Savings Gal / sq-ft		
Indoor		15.28		
Outdoor		8.94		

[illegible]

Measure Level Adjustment Tab

#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	# of Units	Incremental Cost	Building Type	Loadshape	Annual Savings			Lifetime Savings		
										ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
4.3.8	Demand Controls for Central Domestic Hot Water - MF Buildings	CDHW Controls - MF Buildings	Water heater	RF	15	37		MF Buildings	Loadshape C02 - Non-Residential Electric DHW		-	2,342.55		-	35,138.18
4.3.8.2	Demand Controls for Central Domestic Hot Water - Dormitories - Public Sector	CDHW Controls - Dormitories - Public Sector	Water heater	RF	15	27		Dormitories	Loadshape C02 - Non-Residential Electric DHW		-	800.86		-	12,012.90
4.3.8.3	Demand Controls for Central Domestic Hot Water - Dormitories	CDHW Controls - Dormitories	Water heater	RF	15	27		Dormitories	Loadshape C02 - Non-Residential Electric DHW		-	800.86		-	12,012.90
4.3.8.3.T	Demand Controls for Central Domestic Hot Water - Dormitories Teapot Small	CDHW Controls - Dormitories - Teapot Small	Water heater	RF	15	10		Dormitories	Loadshape C02 - Non-Residential Electric DHW		-	301.49		-	4,522.35
4.3.8.T	Demand Controls for Central Domestic Hot Water - Dormitories - MF Buildings	CDHW Controls - MF Buildings - Teapot Small	Water heater	RF	15	10		MF Buildings	Loadshape C02 - Non-Residential Electric DHW		-	636.87		-	9,403.07
4.3.8.4	On-Demand DHW Controller	On-Demand DHW Controller	Water heater	RF	15	1		MF Buildings	Loadshape C02 - Non-Residential Electric DHW		-	58.56		-	878.45

TRM Algorithm

ΔkWh	= ΔkWhheater + ΔkWhpump
ΔkWhheater	= %ElecCDHW * Boiler Capacity * (lnormal occ + %normal occ * flow occ * flow occ) / 3,412
ΔkWhpump	= (HPprecirc * 0.746 * (8760 - Pumphrs controlled)) / Motoreff
ΔkWhpump	= 1,103(1) kWh as default value if values unknown.

Deemed kWh Savings 1103 kWh

TRM Algorithm

ΔTherms	= %FossilCDHW * Boiler Input Capacity * (lnormal occ + %normal occ + flow occ * flow occ) / 100,000
---------	---

TRM Assumptions			Information for Applications and PUP		
Input Values	TRM Description Notes	Description	Application Field	PUP Requirement	
Boiler Input Capacity	TRM Deemed base on lookup table	Input capacity of the Domestic Hot Water boiler in BTU/hr.	Need to discuss what will be collected for actual	Required - Actual?	
lnormalocc	TRM Deemed base on lookup table	Total operating hours of domestic hot water burner, when the facility has normal occupancy. Per TRM: If unknown, assume 1,688 hours for Dormitories and 2,089 hours for Multi-Family buildings	Need to discuss what will be collected for actual	Required - Actual?	
flowocc	TRM Deemed base on lookup table	Total operating hours of domestic hot water burner, when the facility has low occupancy	Need to discuss what will be collected for actual	Required - Actual?	
lnormalocc	Table of lookup values from the TRM based on Building Type	Reduction(%) in total operating hours of domestic hot water burner, due to installed central domestic hot water controls, during normal occupancy period. Per TRM: If unknown, assume 520 hours for	TRM Deemed based on Building Type	TRM Deemed based on Building Type	Required - Actual?
flowocc	Table of lookup values from the TRM based on Building Type	Reduction(%) in total operating hours of domestic hot water burner, due to installed central domestic hot water controls, during low occupancy period. Table of lookup values from the TRM based on Building Type	TRM Deemed based on Building Type	TRM Deemed based on Building Type	Required - Actual?
Conversion Factors	100,000 conversion factor per TRM	TRM Deemed	N/A - TRM Deemed	Required - TRM Deemed	
Incremental Cost					
Measure Life	15 deemed in the TRM The effective useful life is 15 years	TRM Deemed	N/A - TRM Deemed	Required - TRM Deemed	
%FossilDHW	100% proportion of water heating supplied by fossil fuel heating Deemed Table of Values from the TRM where if Electric, 0% and if Fossil Fuel, 100%; if unknown, 68%	TRM Deemed	N/A - TRM Deemed	Required - TRM Deemed	

TRM Table Lookup

	lnormalOcc	flowocc	Boiler Input Capacity	lnormalocc	flowocc	Boiler Input Capacity
Multi-Family	24.0%	44.6%	27.8%	2,089	-	12493
Dormitories	22.4%	0.0%	16.5%	1,688	520	4938
Hotels/Motels	13.4%	0.0%	12.3%	2,428	-	
Offices	22.9%	41.7%	Actual	2,857	1,231	
To Calculate per Unit Default:	= Boiler Input Capacity * (lnormal occ + %normal occ + flow occ * flow occ) / 100,000					
Building Type	Per Unit Default Savings	Boiler Input Capacity	lnormalocc	lnormal/OCC	flowocc	flowocc
MF Buildings	62.69	12,493	2,089	24.02%	-	0.00%
Dormitories	30.15	4,938	1,688	22.44%	520	44.57%

Measure Level Adjustment Tab

4.4.2	Space Heating Boiler Tune-up - 400			Measure Life (Yrs)	Boiler MBH	Pre-Tune Up Boiler Efficiency	Efficiency Improvement	Zone	Building Type	Loadship #	Measure Cost	ΔkWh	ΔkW	ΔTherms		
#	Measure	Short Measure Name	Measure Component													
4.4.2.1	Space Heating Boiler Tune-up - 400	Boiler Tune Up, 400 MBH	Boilers	3		400	81.5%	2.3%	6 (Necor Custom)	Average	N/A			176.53		
4.4.2.2	Space Heating Boiler Tune-up - 300	Boiler Tune Up, 300 MBH	Boilers	3		300	81.5%	2.3%	6 (Necor Custom)	Average	N/A				130.91	
4.4.2.3	Space Heating Boiler Tune-up - 75	Boiler Tune Up, 75 MBH	Boilers	3		75	81.5%	2.3%	6 (Necor Custom)	Unknown	N/A				35.35	
4.4.2.4	Space Heating Boiler Tune-up - 650	Boiler Tune Up, 650 MBH	Boilers	3		650	81.5%	2.3%	6 (Necor Custom)	Unknown	N/A				227.20	
4.4.2.5	Space Heating Boiler Tune-up - 482	Boiler Tune Up, 482 MBH	Boilers	3		482	81.5%	2.3%	6 (Necor Custom)	Unknown	N/A				227.20	
4.4.2.6	Space Heating Boiler Tune-up - 800	Boiler Tune Up, 800 MBH	Boilers	3		800	81.5%	2.3%	6 (Necor Custom)	Unknown	N/A				377.10	
4.4.2.7	Space Heating Boiler Tune-up - 1000	Boiler Tune Up, 1000 MBH	Boilers	3		1,000	81.5%	2.3%	6 (Necor Custom)	Unknown	N/A				471.37	
4.4.2.8	Space Heating Boiler Tune-up - 1500	Boiler Tune Up, > 1000 MBH	Boilers	3		1,500	81.5%	2.3%	6 (Necor Custom)	Unknown	N/A				1649.81	
4.4.2.9	Space Heating Boiler Tune-up - Public Sector	Boiler Tune Up, Public Sector	Boilers	3		Average	81.5%	2.3%	6 (Necor Custom)	Average	N/A				411.69	
4.4.2.10	Space Heating Boiler Tune-up - CPDP	Boiler Tune Up, CPDP	Boilers	3		Average	81.5%	2.3%	6 (Necor Custom)						411.69	
4.4.2.11	Space Heating Boiler Tune-up - 1800	Boiler Tune Up, 1800 MBH BOP	Boilers	3		1,800	81.5%	2.3%	6 (Necor Custom)	Unknown					848.41	
4.4.2.12	Space Heating Boiler Tune-up - 2800	Boiler Tune Up, 2800 MBH BOP	Boilers	3		2,800	81.5%	2.3%	6 (Necor Custom)	Unknown					1319.84	
TRM Algorithm																
Efficiency Savings = EFLH * (EffBefore - Eff) / (EffBefore - 1) / 100000																
Date: 9/22/2026																
Measure Code: CHVHC BLRT 067-2-0101																
TRM Assumptions																
Climate Zone Lookup			Input Values		Notes											
Capacity					used as a lookup for EFLH table											
Capacity					boiler gas input size (Btu/hr)											
					custom - Table of inputs											
EFLH					Table of lookup Values on the tab labeled List											
					Equivalent Full Load Hours for heating are provided in section 4.4 HVAC End Use EFLHs by building type and climate zone provided in Section 4.4											
EffBefore					Table of Lookup values from TRM											
					Efficiency of the boiler before the tune-up											
E																

Efficiency Improvement of the boiler tune-up measure	
81.5% Actual. Default value is 81.5%	
2.30% Actual. Default value is 2.3%	
3 Default Value from the TRM	
Measure Life	
Incremental Cost	
Baseline Definition	
The baseline condition of this measure is a boiler that has not had a tune-up within the past 36 months	
Efficient Definition	
The efficient condition of this measure is a boiler that gets a tune up	

Table for Algorithm inputs

Cost/ABtu/h		Revised TRM Value
NG	400	Boiler gas input size (Btu/hr)
SP	2.30%	Savings factor
EFLH		Equivalent Full Load Hours for heating
EffBefore	81%	Boiler Combustion Efficiency Before Tune-Up

Climate Table Lookup		
G	2	
G	4	
G	4	
G	3	
G	6	
Custom	7	

Conversion from kBtu/h (MBH) to Btu/hr		
Boiler kBtu/h (MBH)	Ave. Btu/hr	Program
11	1,000	MF
711	70,000	MF
3001	300,000	MF
4001	400,000	MF
6501	600,000	MF
4821	482,000	SEES
8001	800,000	SEER
10001	100,000	
18001	180,000	BOP
28001	280,000	BOP
General Conversion: from kBtu/h (MBH) to Btu/hr - multiply MBH by 1000		
	1000	

TRM Assumptions	Input Values	Notes
NGI		Boiler gas input size (MBTU/hr) this is custom input
UF	41.90%	Utilization Factor Deemed TRM Value of 41.9 or custom
ET _{pre}		Boiler Combustion Efficiency Before Tune-Up Custom Input
ET _{measured}	82.6%	Boiler Combustion Efficiency After Tune-Up Actual. Default value is 82.6%
Measure Life		2. The life of this measure is 2 years this is a deemed TRM Value
Incremental Cost		
Baseline Definition		A Boiler that has not had a tune up in the last 3 years
Efficient Definition		A boiler that gets the tune up.

4.4.4 Boiler Lockout/ Reset Controls										Annual Savings			Lifetime Savings			Algorithm Inputs			
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Boiler kbtuh	Zone	Building Type	Measure Cost	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	Climate Zone Lookup	Input	SF	EFUH
4.4.4.1	Boiler Lockout/ Reset Controls - 300 MBH	Boiler Reset Controls, 300 MBH	Boilers	RF	16	300	6 (Nicor Custom)	Unknown				400.87			6,413.95	7	300	8.00%	1670.3
4.4.4.2	Boiler Lockout/ Reset Controls - 400 MBH	Boiler Reset Controls, 400 MBH	Boilers	RF	16	400	6 (Nicor Custom)	Unknown				534.50			8,551.94	7	400	8.00%	1670.3
4.4.4.6	Boiler Lockout/ Reset Controls - 400 MBH - Public Sector	Boiler Reset Controls, 400 MBH - Public Sector	Boilers	RF	16	400	6 (Nicor Custom)	Public Sector Average				489.04			7,824.64	7	400	8.00%	1528.25
4.4.4.7	- 400 MBH - CPDP	Boiler Reset Controls, 400 MBH - CPDP	Boilers	RF	16	400	6 (Nicor Custom)	Public Sector Average			-	489.04	-	-	7,824.64	7	400	8.00%	1528.25

TRM Algorithm	
ΔTherms = B _{input} * SF * EFUP / 300	
DATE	9/22/2026
Measure Code	C-HVC-BLRC-V03-150601

TRM Assumptions	Input Values	Notes
Input		Boiler Input Capacity (BtU)
		this is a custom input
SF		8.00% Savings Factor Custom or 8%, 8% is a deemed TRM value
EFUH	Table of lookup Values on the tab labeled List	Equivalent Full Load Hours for heating are provided in section 4.4 HVAC End Use EFUHs by building type and climate zone provided in Section 4.4 Table of Lookup values from TRM
Conversion		100 = conversion from kbtu to therms
Measure Life		16 The life of this measure is 20 years This is a deemed TRM value
Incremental Cost		
Baseline Definition		Existing boiler without boiler reset controls, any size with constant hot water flow.
Efficient Definition		adding a boiler reset control where Natural gas customer adding boiler reset controls capable of resetting the boiler supply water temperature in an inverse linear fashion with outdoor air temperature. BoilerNatural gas customer adding boiler reset controls capable of resetting the boiler supply water temperature in an inverse linear fashion with outdoor air temperature.

Table for Algorithm Inputs	
Incremental Cost	

Measure Level Adjustment Tab

4.4.5							Annual Savings			Lifetime Savings		
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
4.4.5	Condensing Unit Heaters	Condensing Unit Heaters, >90% <300 MBH	Other HVAC	TOS	12				266.02			3,192.18
4.4.5.2	Condensing Unit Heaters - Public Sector	Condensing Unit Heaters, >90% <300 MBH - Public Sector	Other HVAC	TOS	12				266.02			3,192.18

TRM Algorithm	
$\Delta\text{Therms} = ((\text{Capacity} * \text{EFLH} * \text{UF}) / 100) * (1 / \text{Eff_Base} - 1 / \text{Eff_EE})$	
Date	9/22/2026
Measure Code	CI-HVC-CUHT-V02-220101

TRM Assumptions	Input Values	Notes
Capacity	170.85	Nominal rating of the input capacity of the new condensing unit heater in kBtu/hr (Actual - rightsized to match the deemed value per IL TRM v9)
EFLH	1,548	Equivalent Full load hours This is a deemed TRM Value (Using Nicor Gas average value)
UF	72.50%	Utilization Factor Deemed value
Eff_Base	80%	Combustion Efficiency of the baseline unit heater This is a default TRM Value
Eff_EE	90%	The expected measure life is assumed to be 12 years This is a default TRM Value
Measure Life	12	
Incremental Cost	Capacity * \$15.56	

Program Types	
TOS	Time of Sale
NC	New Construction

Region

Product Line

Category

Sub-Category

Item ID

Item Name

Item Description

Item Price

Item Weight

Item Volume

North America

Electronics

Smartphones

Flagship

001

iPhone 15 Pro

Latest iPhone 15 Pro, 128GB

\$1,199

200g

100,000

North America

Electronics

Smartphones

Flagship

002

Samsung Galaxy S24

Latest Samsung Galaxy S24, 128GB

\$999

190g

120,000

North America

Electronics

Smartphones

Flagship

003

Google Pixel 8 Pro

Latest Google Pixel 8 Pro, 128GB

\$999

200g

80,000

North America

Electronics

Smartphones

Flagship

004

OnePlus 12

Latest OnePlus 12, 128GB

\$799

200g

60,000

North America

Electronics

Smartphones

Flagship

005

Xiaomi 14 Pro

Latest Xiaomi 14 Pro, 128GB

\$699

200g

90,000

North America

Electronics

Smartwatches

Premium

006

Apple Watch Series 9

Latest Apple Watch Series 9, 45mm

\$399

50g

50,000

North America

Electronics

Smartwatches

Premium

007

Samsung Galaxy Watch 6

Latest Samsung Galaxy Watch 6, 44mm

\$299

50g

40,000

North America

Electronics

Smartwatches

Premium

008

Fitbit Sense 2

Latest Fitbit Sense 2, 42mm

\$249

50g

30,000

North America

Electronics

Smartwatches

Premium

009

Garmin Venu 3

Latest Garmin Venu 3, 45mm

\$449

60g

20,000

North America

Electronics

Smartwatches

Premium

010

Huawei Watch GT 4

Latest Huawei Watch GT 4, 46mm

\$349

60g

35,000

Europe & Asia

Electronics

Smartphones

Flagship

011

iPhone 15 Pro

Latest iPhone 15 Pro, 128GB

\$1,199

200g

100,000

Europe & Asia

Electronics

Smartphones

Flagship

012

Samsung Galaxy S24

Latest Samsung Galaxy S24, 128GB

\$999

190g

120,000

Europe & Asia

Electronics

Smartphones

Flagship

013

Google Pixel 8 Pro

Latest Google Pixel 8 Pro, 128GB

\$999

200g

80,000

Europe & Asia

Electronics

Smartphones

Flagship

014

OnePlus 12

Latest OnePlus 12, 128GB

\$799

200g

60,000

Europe & Asia

Electronics

Smartphones

Flagship

015

Xiaomi 14 Pro

Latest Xiaomi 14 Pro, 128GB

\$699

200g

90,000

Europe & Asia

Electronics

Smartwatches

Premium

016

Apple Watch Series 9

Latest Apple Watch Series 9, 45mm

\$399

50g

50,000

Europe & Asia

Electronics

Smartwatches

Premium

017

Samsung Galaxy Watch 6

Latest Samsung Galaxy Watch 6, 44mm

\$299

50g

40,000

Europe & Asia

Electronics

Smartwatches

Premium

018

Fitbit Sense 2

Latest Fitbit Sense 2, 42mm

\$249

50g

30,000

Europe & Asia

Electronics

Smartwatches

Premium

019

Garmin Venu 3

Latest Garmin Venu 3, 45mm

\$449

60g

20,000

Europe & Asia

Electronics

Smartwatches

Premium

020

Huawei Watch GT 4

Latest Huawei Watch GT 4, 46mm

\$349

60g

35,000

Asia Pacific

Electronics

Smartphones

Flagship

021

iPhone 15 Pro

Latest iPhone 15 Pro, 128GB

\$1,199

200g

100,000

Asia Pacific

Electronics

Smartphones

Flagship

022

Samsung Galaxy S24

Latest Samsung Galaxy S24, 128GB

\$999

190g

120,000

Asia Pacific

Electronics

Smartphones

Flagship

023

Google Pixel 8 Pro

Latest Google Pixel 8 Pro, 128GB

\$999

200g

80,000

Asia Pacific

Electronics

Smartphones

Flagship

024

OnePlus 12

Latest OnePlus 12, 128GB

\$799

200g

60,000

Asia Pacific

Electronics

Smartphones

Flagship

025

Xiaomi 14 Pro

Latest Xiaomi 14 Pro, 128GB

\$699

200g

90,000

Asia Pacific

Electronics

Smartwatches

Premium

026

Apple Watch Series 9

Latest Apple Watch Series 9, 45mm

\$399

50g

50,000

Asia Pacific

Electronics

Smartwatches

Premium

027

Samsung Galaxy Watch 6

Latest Samsung Galaxy Watch 6, 44mm

\$299

50g

40,000

Asia Pacific

Electronics

Smartwatches

Premium

028

Fitbit Sense 2

Latest Fitbit Sense 2, 42mm

\$249

50g

30,000

Asia Pacific

Electronics

Smartwatches

Premium

029

Garmin Venu 3

Latest Garmin Venu 3, 45mm

\$449

60g

20,000

Asia Pacific

Electronics

Smartwatches

Premium

030

Huawei Watch GT 4

Latest Huawei Watch GT 4, 46mm

\$349

60g

35,000

Region

Product Line

Category

Sub-Category

Item ID

Item Name

Item Description

Item Price

Item Weight

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North America

Electronics

Smartphones

Flagship

001

iPhone 15 Pro

Latest iPhone 15 Pro, 128GB

\$1,199

200g

100,000

North America

Electronics

Smartphones

Flagship

002

Samsung Galaxy S24

Latest Samsung Galaxy S24, 128GB

\$999

190g

120,000

North America

Electronics

Smartphones

Flagship

003

Google Pixel 8 Pro

Latest Google Pixel 8 Pro, 128GB

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North America

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Region

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North America

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North America

Electronics

Smartwatches

Premium

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Apple Watch

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Measure Level Adjustment Tab

#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Loadshare	Incremental Cost	ΔkWh	Annual Savings			Lifetime Savings			Capacity	RSF	EFLH
									ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	ΔkWh			
4.4.12	Infrared Heaters (all sizes), Low Intensity	Infrared Heaters	Other HVAC	TOS	15	N/A				281.27			4,219.08		125,000	0.85	1,275
4.4.12.2	Infrared Heaters (all sizes), Low Intensity - Public Sector	Infrared Heaters - Public Sector	Other HVAC	TOS	15	N/A				281.27			4,219.08		125,000	0.85	1,275

TRM Assumptions	Input Values	Notes
Measure Life	15	The expected measure life is assumed to be 15 years This is a deemed TRM Value
Incremental Cost	\$ 2.70	per kBtu/yr
Therm Savings		
Date	9/02/2026	
Measure Code	CS-HVC-IRHT-V04-250101	

Program Types	Time of Sale	GRC	RSF
TOS		GRC < 0.67	0.85
NC	New Construction	0.67 <= GRC	0.7

The diagram is a complex, multi-layered grid of tables and text blocks, resembling a data visualization or a complex form. It is composed of numerous small, overlapping rectangular elements, some containing text and others containing numerical data. The overall structure is highly organized and systematic, suggesting a detailed analysis or a complex data set.

The diagram is organized into several main sections, each containing a grid of data. The top section is a large grid with multiple columns and rows, containing numerical data. Below this is a section with a grid of text blocks, some of which are highlighted in yellow. The bottom section is a grid of text blocks, some of which are highlighted in yellow. The diagram is highly detailed and complex, with many small elements and a lot of data.

[illegible]

[illegible]

[illegible][illegible][illegible]

Controls for												Absolute Inputs										
Short Measure Name		Measure Component	Measure Boiler Life (Yrs)	Building Type	Climate Zone	Measure Cost (\$/kW)	\$/kW	A/Etherms (\$/kW)	\$/kW	A/Etherms	Total Therms	Measure Life (Years)	Total Cost (\$)	SP	SP (\$/kW)	Climate Zone Lookup						Effect to House Conversion
Controls for Linkageless Controls		Boilers	30	480	Office - Low Rise - 2 (Chicago)	-	-	253.00	-	-	5,040.00	###999	2625									100
Controls for Bldg Sector Linkageless Controls - Public Sector		Boilers	30	1	Bldg Sector Avera (Nicer Custom)	-	-	0.51	-	-	0.51	1	###99	2528								100
Controls for residential 2000 Boiler, Linkageless Controls		Agriculture	35	2,000	Greenhouse w/curtains (Nicer Custom)	-	-	###999	-	-	32,524.00	###999	###11									100

1 (Rockford)
2 (Chicago)
3 (Springfield)
4 (Beverly)
5 (Madison)

Item	Value	Assessment
Boiler gas input use (\$/Btu)	This is recommended as a custom value per the TRM	TRM Deemed
2.500 Energy Factor		TRM Deemed
Energy factor is the percentage increase in efficiency as a result of the added input less burner controls. Annual boiler firing rates, single-point controls are assumed to have an average of 57% versus operating controls are assumed to have 27% more. The difference between control types is 30% under the average condition. A 15% reduction in natural gas is approximately a 15% increase in efficiency. Therefore the normal combustion efficiency increase is $(27/57) \times 15 = 7.0\%$.		TRM Deemed based on table of input values by Building type
Equivalent Full Load Hours for heating are provided in section 4.4 HVAC End Use		TRM Deemed
Table of Input values from TRM Table 4.4 HVAC End Use based on Building Type		TRM Deemed
100 convert kilts to therms		TRM Deemed
The expected measure life is assumed to be 20 years. This is derived per the TRM v3.0 (provided from v4)		TRM Deemed

TRM V5 Notes

Clarity on VSD measure referred to for electric savings

When a Variable Speed Drive is incorporated, electrical savings are calculated according to the "4.4.17 Variable Speed Drive for HVAC Pumps and Cooling Tower Fans" measure.

FAIR baseline DEFINITION OF EFFICIENT EQUIPMENT The boiler burner must have a fluegasless control system allowing the combustion air damper position to be adjusted and set for optimal efficiency at several firing rates throughout the burner's firing range. This requires the fuel valve and combustion air damper to each be powered by a separate actuator. An alternative to the combustion air damper is a Variable Speed Drive on the combustion fan. DEFINITION OF LEAGUE EQUIPMENT The baseline boiler utilizes single point positioning for the burner combustion control. Savings factor is the percentage increase in efficiency as a result of the addition of fluegasless burner controls. Algorithm: $\text{Athens} = \text{Nsg} \times 18 \times \text{EF} / 100$ baseline is just the removal of the SF from the equation?

Measure 1: Oxygen Trim Controls								Annual Savings				Lifetime Savings							
#	Measure	Short Measure Name	Measure Component	Measure Life (Yrs)	Boiler kbtu/hr	Building Type	Climate Zone	Measure Cost	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	Ngj	SF	EFLH	Climate Zone Lookup	
4.4.22	Oxygen Trim Controls	O2 Trim	Boilers	20	1	Office - Low Rise	2 (Chicago)		-	-	0.21	-	-	4.20	1	0.80%	2625	3	
4.4.22.2	Oxygen Trim Controls - Public Sector	O2 Trim - Public Sector	Boilers	20	1	Office - Low Rise	2 (Chicago)		-	-	0.21	-	-	4.20	1	0.80%	2625	3	
4.4.22.3	Oxygen Trim Controls - Agriculture	Boiler, Oxygen trim Controls	Agriculture	20	2,000	Greenhouse - w curtains	6 (Nicor Custom)		-	-	656.50	-	-	13,129.92	2,000	0.80%	4103.1	7	

$\Delta\text{therms} = \text{Ngj} * \text{SF} * \text{EFLH} / 100$

Definition of Baseline Equipment

The baseline boiler utilizes linkage-less positioning for the burner combustion control. For boilers with single-point positioning control, see measure 4.4.21 "Linkage-less boiler controls for Space Heating". This measure is intended as an incremental upgrade to linkage-less controls.

1 (Rockford)
2 (Chicago)
3 (Springfield)
4 (Belleville)
5 (Marion)

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Docket No. 26-0458
 Nicor Gas Ex. 1.1
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Measure Level Adjustment Tab

Multi-Family Space Heating Steam Boiler Averaging Controls														Annual Savings			Lifetime Savings			TEAPot			Climate Zone Lookup	Capacity	SF	EFUH	Btu to Therm Conversion
#	Measure	Short Measure Name	Measure Component	Measure Life (Yrs)	Boiler Gas Input Capacity (Btu/hr)	Zone	Building Type	Loadshape	Measure Cost	ΔBtu/h	ΔkW	ΔTherms	ΔBtu/h	ΔkW	ΔTherms	Total Therms	Measure Life	Total Cost									
4.4.36.1	Multi-Family Space Heating Steam Boiler Averaging Controls - 30062	Steam Boiler Averaging Controls - CPOF	Boilers	20	36,062	6 (Nicor Custom)	Average MF		-	-	50.41	-	-	1308.18			7	36,062	10.20%	1370	100000						
4.4.36.2	Multi-Family Space Heating Steam Boiler Averaging Controls - 30000	Steam Boiler Averaging Controls - CPOF	Boilers	20	300,000	6 (Nicor Custom)	Average MF		-	-	419.35	-	-	8387.00			7	300,000	10.20%	1370	100000						

TRM Algorithm	
ΔTherms = Capacity × EFUH × SF / 100,000	
GRΔTherms = Living Units × Gas Boiler Load × SF × SF	

TRM Assumptions	Input Values	Notes	Origin	Application
Capacity		Boiler gas input size (Btu/h) TRM recommends to use actual	Custom?	
EFUH		Effective Full Load Hours for heating are provided in section 4.4. HVAC End Use Table of TRM Values from section 4.4 HVAC end Use	TRM Deemed Values	
SF		10.2% Savings Factor 10.2% or custom if savings can be substantiated 1% Custom - not doing steam balancing with the install. Source provided by the TRM, the 10.2% value is a combination of 5.2% savings	Custom?	
Conversion Factors	100000	Converts Btu to Therms		
Measure Life	20	The measure life for the domestic hot water boilers is 20 years. This is Deemed by the TRM (new measure for TRM v3)		
Measure Cost		As a retrofit measure, the actual installed cost should be used for screening purposes.		
Living Units (option 2)	Note: methodology not utilized	Number of living units (apartment or condos) served by the boiler Actual		
RF (option 2)	Note: methodology not utilized	Household factor 65% for multifamily		
Gas Boiler Load (option 2)	Note: methodology not utilized	Estimate of annual household load for gas boiler heated single-family homes. If location is unknown, assume the average below lookup table.		

EFUH MF average from List Table on Tab List	Zone 1 (Rockford)	Zone 2 (Chicago)	Zone 3 (Springfield)	Zone 4 (Burlington)	Zone 5 (Marion)	6 (Nicor Custom)
MF - High Rise	1,565	1,540	1,448	1,089	1,125	1,518
MF - High Rise - Common	937	958	901	480	499	946
MF - High Rise - Residential	1,660	1,666	1,512	1,143	1,207	1,600
MF - Mid Rise	1,730	1,782	1,589	1,138	1,340	1,747
Average MF	1,374	1,387	1,263	1,063	1,098	1,370

Climate Zone	Gas Boiler Load (therms)
1 (Rockford)	1275
2 (Chicago)	1218
3 (Springfield)	1042
4 (Burlington)	605
5 (Marion)	618
Average	1116

4.4.38

#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Annual Savings			Lifetime Savings			TBAHV		Notes
							ΔBtWh	ΔkW	ΔTtherms	ΔBtWh	ΔkW	ΔTtherms	Total Therms	Total Cost	
4.4.39.1	HTHV Direct Gas Fired Unit Heater - 757 MBTU/hr	Direct Fired Space Heater	Other HVAC	TOS	15	\$ 19,682.00	-	-	3,058.00			45,870.00			This is not the correct baseline, however, using this to back into an assumption that gets the savings percentage to 20%
4.4.39.2	HTHV Direct Fired Rooftop Unit Heater - 757 MBTU/hr	Direct Fired Rooftop Unit Heater	Other HVAC	TOS	15	\$19,682.00			2,506.00			37,506.00			
4.4.39.3	HTHV Steam Fired Unit Heater - 757 MBTU/hr	Steam Fired Unit Heater	Other HVAC	TOS	15	\$19,682.00			4,709.00			70,635.00			

BtWh Algorithm
Therms = ((Capacity (Btu/hr) / 1000) * 24) / (Btu per Therm = 100,000)

BtWh Assumptions	Input Values	Notes
Capacity	757	TBAHV Average Value
Weather	15	Chicago R00MBTU/hr
Incremental Cost	\$19,682.00	Capacity * 50k / MBTU/hr
Therm Savings	\$26.00	TBA Methodology
Therm Savings	Deemed in TBA	See Table

Capacity (MBTU/hr)	Average Capacity (BtWh/hr)	Nearest Weather Station	ΔTherms (Baseline: Steam Fired Unit Heaters)	ΔTherms (Baseline: Gas Fired Unit Heaters)	ΔTherms (Baseline: Rooftop Units)	Weighting
500 < Capacity ≤ 900	757	Chicago	4308	3368	2306	0.6
500 < Capacity ≤ 900	757	Rockford	5208	3846	2725	0.2
500 < Capacity ≤ 900	757	Springfield	4092	2662	2188	0.1
500 < Capacity ≤ 900	757	Near Custom	4276.5	2770.5	2267.4	0

300 < Capacity ≤ 500 400 Rockford 3,120 1,996 1,620
300 < Capacity ≤ 900 757 Rockford 5,208 3,346 2,725
900 < Capacity ≤ 1,000 950 Rockford 6,280 4,047 3,297
1,000 < Capacity ≤ 1,400 1,200 Rockford 7,856 4,932 4,000
1,400 < Capacity ≤ 1,600 1,400 Rockford 9,248 5,566 4,432
1,600 < Capacity ≤ 2,100 1,850 Rockford 11,180 5,180 3,863
2,100 < Capacity ≤ 2,400 2,200 Rockford 12,514 5,180 3,863
2,400 < Capacity ≤ 2,718 Rockford 15,547 5,028 4,028
300 < Capacity ≤ 500 400 Chicago 2,820 1,824 1,488
900 < Capacity ≤ 1,000 950 Chicago 3,096 1,996 1,620
1,000 < Capacity ≤ 1,400 1,200 Chicago 3,696 2,306 1,872
1,400 < Capacity ≤ 1,600 1,400 Chicago 3,696 2,306 1,872
1,600 < Capacity ≤ 2,100 1,850 Chicago 4,356 2,725 2,188
2,100 < Capacity ≤ 2,400 2,200 Chicago 4,356 2,725 2,188
2,400 < Capacity ≤ 2,718 Chicago 4,356 2,725 2,188
300 < Capacity ≤ 500 400 Springfield 2,452 1,588 1,300
900 < Capacity ≤ 1,000 950 Springfield 2,452 1,588 1,300
1,000 < Capacity ≤ 1,400 1,200 Springfield 2,452 1,588 1,300
1,400 < Capacity ≤ 1,600 1,400 Springfield 2,452 1,588 1,300
1,600 < Capacity ≤ 2,100 1,850 Springfield 2,452 1,588 1,300
2,100 < Capacity ≤ 2,400 2,200 Springfield 2,452 1,588 1,300
2,400 < Capacity ≤ 2,718 Springfield 2,452 1,588 1,300
300 < Capacity ≤ 500 400 Belleville 2,456 1,604 1,320
900 < Capacity ≤ 1,000 950 Belleville 2,456 1,604 1,320
1,000 < Capacity ≤ 1,400 1,200 Belleville 2,456 1,604 1,320
1,400 < Capacity ≤ 1,600 1,400 Belleville 2,456 1,604 1,320
1,600 < Capacity ≤ 2,100 1,850 Belleville 2,456 1,604 1,320
2,100 < Capacity ≤ 2,400 2,200 Belleville 2,456 1,604 1,320
2,400 < Capacity ≤ 2,718 Belleville 2,456 1,604 1,320
300 < Capacity ≤ 500 400 Marion 2,456 1,604 1,320
900 < Capacity ≤ 1,000 950 Marion 2,456 1,604 1,320
1,000 < Capacity ≤ 1,400 1,200 Marion 2,456 1,604 1,320
1,400 < Capacity ≤ 1,600 1,400 Marion 2,456 1,604 1,320
1,600 < Capacity ≤ 2,100 1,850 Marion 2,456 1,604 1,320
2,100 < Capacity ≤ 2,400 2,200 Marion 2,456 1,604 1,320
2,400 < Capacity ≤ 2,718 Marion 2,456 1,604 1,320

Capacity (MBTU/hr)	Average Capacity (BtWh/hr)	Nearest Weather Station	ΔTherms (Baseline: Steam Fired Unit Heaters)	ΔTherms (Baseline: Gas Fired Unit Heaters)	ΔTherms (Baseline: Rooftop Units)
300 < Capacity ≤ 500	400	Rockford	3,120	1,996	1,620
500 < Capacity ≤ 900	757	Rockford	5,208	3,346	2,725
900 < Capacity ≤ 1,000	950	Rockford	6,280	4,047	3,297
1,000 < Capacity ≤ 1,400	1,200	Rockford	7,856	4,932	4,000
1,400 < Capacity ≤ 1,600	1,400	Rockford	9,248	5,566	4,432
1,600 < Capacity ≤ 2,100	1,850	Rockford	11,180	5,180	3,863
2,100 < Capacity ≤ 2,400	2,200	Rockford	12,514	5,180	3,863
2,400 < Capacity ≤ 2,718	2,718	Rockford	15,547	5,028	4,028
300 < Capacity ≤ 500	400	Chicago	2,820	1,824	1,488
500 < Capacity ≤ 900	757	Chicago	4,709	3,058	2,506
900 < Capacity ≤ 1,000	950	Chicago	5,681	3,696	3,031
1,000 < Capacity ≤ 1,400	1,200	Chicago	6,924	4,312	3,606
1,400 < Capacity ≤ 1,600	1,400	Chicago	8,364	4,482	4,482
1,600 < Capacity ≤ 2,100	1,850	Chicago	10,646	5,364	5,364
2,100 < Capacity ≤ 2,400	2,200	Chicago	11,642	5,364	5,364
2,400 < Capacity ≤ 2,718	2,718	Chicago	14,979	5,364	5,364
300 < Capacity ≤ 500	400	Springfield	2,452	1,588	1,300
500 < Capacity ≤ 900	757	Springfield	4,092	2,662	2,188
900 < Capacity ≤ 1,000	950	Springfield	4,950	3,221	2,651
1,000 < Capacity ≤ 1,400	1,200	Springfield	6,014	3,396	3,400
1,400 < Capacity ≤ 1,600	1,400	Springfield	7,285	4,767	3,914
1,600 < Capacity ≤ 2,100	1,850	Springfield	8,712	5,717	4,718
2,100 < Capacity ≤ 2,400	2,200	Springfield	10,164	6,666	5,500
2,400 < Capacity ≤ 2,718	2,718	Springfield	12,518	6,045	6,045
300 < Capacity ≤ 500	400	Belleville	2,456	1,604	1,320
500 < Capacity ≤ 900	757	Belleville	4,103	2,687	2,188
900 < Capacity ≤ 1,000	950	Belleville	5,249	3,249	2,689
1,000 < Capacity ≤ 1,400	1,200	Belleville	6,036	3,972	3,276
1,400 < Capacity ≤ 1,600	1,400	Belleville	7,200	4,812	3,972
1,600 < Capacity ≤ 2,100	1,850	Belleville	8,751	5,772	4,773
2,100 < Capacity ≤ 2,400	2,200	Belleville	10,186	6,732	5,566
2,400 < Capacity ≤ 2,718	2,718	Belleville	12,585	6,127	6,127
300 < Capacity ≤ 500	400	Marion	2,180	1,444	1,200
500 < Capacity ≤ 900	757	Marion	3,649	2,430	2,021
900 < Capacity ≤ 1,000	950	Marion	4,408	2,936	2,442
1,000 < Capacity ≤ 1,400	1,200	Marion	5,364	3,376	2,888
1,400 < Capacity ≤ 1,600	1,400	Marion	6,491	4,332	3,613
1,600 < Capacity ≤ 2,100	1,850	Marion	7,789	5,317	4,548
2,100 < Capacity ≤ 2,400	2,200	Marion	9,064	6,072	5,082
2,400 < Capacity ≤ 2,718	2,718	Marion	10,576	7,139	6,116

Measure Level Adjustment Tab

#	Measure	Short Measure Name	Program Type	Measure Life (Yrs)	Incremental Measure Cost	Climate Zone	Annual Savings			Lifetime Savings		
							ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
4.4.47.1	Air Deflectors for Unit Ventilators	Air Deflectors	DI	20		2 (Chicago)			0			0

Measure has been removed from TRM

Climate Zone	Natural Gas Savings (therms/yr)
1 (Rockford)	0
2 (Chicago)	0
3 (Springfield)	0
4 (Belleville)	0
5 (Marion)	0

DEFINITION OF EFFICIENT EQUIPMENT

The efficient equipment consists of UVs on North, East or West facing walls with supply air deflectors mounted over existing unit ventilators utilizing an angled grille to direct airflow from the unit ventilator into the center of a room.

DEFINITION OF BASELINE EQUIPMENT

The baseline equipment is a UV located adjacent to exterior north, east, and west-facing perimeter windows with no existing technology to address air stratification installed. UVs located adjacent to south-facing perimeter windows are not eligible for this measure.

DEEMED LIFETIME OF EFFICIENT EQUIPMENT

The expected measure life is estimated at 20 years.

20

DEEMED MEASURE COST

Program Types	RF
	DI

Measure Level Adjustment Tab

4.4.48	#	Measure	Short Measure Name	Program Type	Measure Life (Yrs)	Incremental Measure Cost	Building Type	Climate Zone	Annual Savings			Lifetime Savings			ΔElecHeat	ΔFtHtHeat	Capacity	ΔHeat_Fossil	Heating_Reduction	BAF
4.4.48.1		Small Commercial Thermostats	Small Commercial Thermostats	CH	11	\$ 175	Average	6 (Nicor Custom)	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	0.00	1546.27	114,500	75%	8.8%	0.80

NATURAL GAS SAVINGS		
$\Delta \text{Therms} = [(1 - \% \text{ElectricHeat}) * \text{EFLHheat} * \text{Capacity} * 1 / \text{Heat_Fossil} * \text{Heating_Reduction} * \text{BAF}] / 100,000 \text{Btu/Therm}$		
Where:		
ΔElecHeat = % Heating savings assumed to be elec	Elec Heat	1.00
EFLHheat = Heating mode equivalent full load hours	Gas Heat	0.00
Capacity = Nominal Heating Input Capacity (Btu/hr)	Unknown	0.00
Heat_Fossil = Annual Fuel Utilization Efficiency Rating	6 (Nicor Custom)	1546.27
Heating_Reduction = assumed % heating reduction due to Total	Actual	
BAF = Baseline adjustment factor	TRM Deemed value	114,500
	Unknown - Code Baseline	75.0%
	Baseline - Manual Tstat	8.80%
	Baseline - Programmable Tstat	1.0
	Baseline - Unknown	0.8

DEFINITION OF EFFICIENT EQUIPMENT
The criteria for this measure are established by replacement of a manual-only thermostat, with one that has the capability to establish a schedule of time and/or temperature setpoints, or replacement of a programmable thermostat with an Advanced Thermostat.

The thermostat must be installed to control a single-zone HVAC system. This measure is limited to packaged HVAC units 10 tons or less. This measure should not be used when HVAC systems are being replaced, in new construction and whenever code compliance is required.

DEFINITION OF BASELINE EQUIPMENT
The baseline is assumed to be a manual or programmable thermostat.
DEEMED LIFETIME OF EFFICIENT EQUIPMENT
The expected measure life is assumed to be 11 years
11
DEEMED MEASURE COST
For CH and other programs for which installation services are provided, the actual material, labor, and other costs should be used. If unknown then the average incremental cost for the new installation measure is assumed to be \$175.
\$ 175.00
Program Types
TOS
RF
CH

Measure Level Adjustment Tab

#	Measure	Short Measure Name	Measure Component	Measure Life (Yrs)	Incremental Cost	Building Type	Climate Zone	Scale Thickness (inches)	Pressure	EFLH	Capacity	%EI	Annual Savings			Lifetime Savings																			
4.4.49.1	Boiler Chemical Descaling	Boiler Chemical Descaling	Boilers	2		Manufacturing Facility	Rockford	Normal (≥1/32 & ≤ 3/64)	Low Pressure (15psig and below) Applications	1016.1	2,500,000	2.50%			635.06		1,270.13																		
NATURAL GAS SAVINGS $\Delta \text{Therms} = (\text{Capacity} * \text{EFLH} * \% \text{EI}) / 100,000$																635.0625																			
DEFINITION OF BASELINE EQUIPMENT The baseline condition is a boiler system that is compromised by scale build up.																635.063																			
DEEMED MEASURE COST																																			
COINCIDENCE FACTOR																																			
Measure Life		<table><tr><th>Climate Zone</th><th>Measure Life (Yr) scaling</th></tr><tr><td>Rockford</td><td>2</td></tr><tr><td>Chicago</td><td>6</td></tr><tr><td>Springfield</td><td>2</td></tr><tr><td>Bellville</td><td>3</td></tr><tr><td>Madison</td><td>3</td></tr></table>		Climate Zone	Measure Life (Yr) scaling	Rockford	2	Chicago	6	Springfield	2	Bellville	3	Madison	3																				
Climate Zone	Measure Life (Yr) scaling																																		
Rockford	2																																		
Chicago	6																																		
Springfield	2																																		
Bellville	3																																		
Madison	3																																		
Capacity		Nominal Heating Input Capacity Boiler Size (Btu/hr) for boiler unit		Actual																															
EFLH		Equivalent Full Load Hours for heating in Existing Buildings are provided in section 4.4 HVAC End Use. For process loads, use custom hours.																																	
%EI		Percent efficiency improvement from chemical descaling		<table><tr><th colspan="3">Efficiency Improvement (Unit)</th></tr><tr><th>Scale Thickness (inches)</th><th>Low Pressure (15psig and below) Applications</th><th>High Pressure (above 15psig) Applications</th></tr><tr><td>Low (<1/64")</td><td>1%</td><td>1.00%</td></tr><tr><td>Normal (≥1/32 & ≤ 3/64)</td><td>2.50%</td><td>3.50%</td></tr><tr><td>High (≥1/16")</td><td>3.50%</td><td>6.25%</td></tr></table>														Efficiency Improvement (Unit)			Scale Thickness (inches)	Low Pressure (15psig and below) Applications	High Pressure (above 15psig) Applications	Low (<1/64")	1%	1.00%	Normal (≥1/32 & ≤ 3/64)	2.50%	3.50%	High (≥1/16")	3.50%	6.25%			
Efficiency Improvement (Unit)																																			
Scale Thickness (inches)	Low Pressure (15psig and below) Applications	High Pressure (above 15psig) Applications																																	
Low (<1/64")	1%	1.00%																																	
Normal (≥1/32 & ≤ 3/64)	2.50%	3.50%																																	
High (≥1/16")	3.50%	6.25%																																	

[Measure Level Adjustment Tab](#)

#	Measure	Short Measure Name	Measure Component	Measure Life (Yrs)	Incremental Cost	Climate Zone	HVAC System Type	HS_cz	Area_radiator	Annual Savings			Lifetime Savings		
										ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
4.4.52.1	Hydronic Heating Radiator Replacement	Hydronic Heating Radiator Replacement	Other HVAC	25		6 - Nicor Custom	Hot Water Radiator Heavy Scaling	0.3304	85			28.08			702.10

NATURAL GAS SAVINGS
 ΔTherms= HS_cz * Area_radiator

DEFINITION OF BASELINE EQUIPMENT

The baseline condition is the hydronic radiator being replaced, which has shown decreased performance due to a high degree of mineral deposit scaling and sludge buildup.

DEEMED MEASURE COST

COINCIDENCE FACTOR

HVAC System Type	1 - Rockford	2 - Chicago	3 - Springfield	4 - Belleville	5 - Marion	6 - Nicor Custom
Hot Water Radiator Standard Scaling	0.115	0.113	0.102	0.091	0.094	0.1125
Hot Water Radiator Heavy Scaling	0.337	0.322	0.301	0.269	0.278	0.3204
Steam Radiator Standard Scaling	0.17	0.166	0.152	0.136	0.14	0.167
Steam Radiator Heavy Scaling	0.501	0.493	0.447	0.4	0.413	0.4908

									Annual Savings			Lifetime Savings			Algorithm Inputs																	
#	Measure	Short Measure Name	Program Type	Measure Life (Yrs)	Incremental Cost	Climate Zone	Compressor motor nominal HP	Shift	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	ηHR	HP	PP	Hours	CHF	ηheat												
4.7.9.1	Compressed Air Heat Recovery	Compressed Air Heat Recovery	RF	15	\$ 16,000.00	Chicago	200	Four Shifts			21,777.87			326,668.06	1	200.0	93.5%	8320	55%	80%												
Measure Life		15 years																														
Incremental Cost		\$ 80.00 /hp																														
Δtherms = ηHR * 2,545 * HP * PP * Hours * CHF / 100,000 / ηheat																																
ηHR		Efficiency of heat recovery																														
		80%																														
Conversion factor		2545																														
HP		actual																														
PP		Percent power at average load (% flow or capacity) conditions																														
		If average flow is unknown, assume 65%																														
		If compressor type is unknown, assume 93.5%																														
		Load/No-load (1 gal/CFM)																														
Hours		Compressor hours of operation below depending on shift																														
		Use actual hours if known, otherwise assume values in table below																														
		<table><tr><th>Shift</th><th>Hours</th></tr><tr><td>Single Shift</td><td>1976</td></tr><tr><td>Two Shifts</td><td>3952</td></tr><tr><td>Three Shifts</td><td>5928</td></tr><tr><td>Four Shifts</td><td>8320</td></tr><tr><td>Unknown</td><td>5702</td></tr></table>																			Shift	Hours	Single Shift	1976	Two Shifts	3952	Three Shifts	5928	Four Shifts	8320	Unknown	5702
Shift	Hours																															
Single Shift	1976																															
Two Shifts	3952																															
Three Shifts	5928																															
Four Shifts	8320																															
Unknown	5702																															
CHF		Climate heating factor																														
		<table><tr><th>Zone</th><th>Climate Heating Factor</th></tr><tr><td>Rockford</td><td>58%</td></tr><tr><td>Chicago</td><td>55%</td></tr><tr><td>Springfield</td><td>48%</td></tr><tr><td>Bartlett</td><td>49%</td></tr><tr><td>Marion</td><td>46%</td></tr></table>																			Zone	Climate Heating Factor	Rockford	58%	Chicago	55%	Springfield	48%	Bartlett	49%	Marion	46%
Zone	Climate Heating Factor																															
Rockford	58%																															
Chicago	55%																															
Springfield	48%																															
Bartlett	49%																															
Marion	46%																															
ηheat		Heating system efficiency																														
		If actual heating system efficiency is unknown, assume 80%																														
		80%																														

Measure Level Adjustment Tab

#	Measure	Short Measure Name	Program Type	Measure Life (Yrs)	Incremental Measure Cost	Climate Zone	Building Type	Annual Savings			Lifetime Savings		
								ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
4.8.2.1	Spring-Loaded Garage Door Hinge	Garage Door Hinge	RF	20		Zone 2 (Chicago)	Warehouse			46.2			924

Program Types	NC
	RF

Annual Therm Savings Existing Buildings					
Building Type	Zone 1 (Rockford)	Zone 2 (Chicago)	Zone 3 (Springfield)	Zone 4 (Belleville)	Zone 5 (Marion)
Convenience Store	57	49.1	42	27.8	25.1
Garage	37.9	34.8	29.5	21.7	19.4
High School	69.5	66.6	57.1	50.7	41.8
Manufacturing	40.3	36.4	32.5	18.1	16.4
Office - Low Rise	108.7	94.2	81.9	64	52.6
Retail - Strip Mall	51.8	47.6	41	33.9	28.3
Warehouse	49.4	46.2	40.9	36.6	31.6

Annual Therm Savings New Construction					
Building Type	Zone 1 (Rockford)	Zone 2 (Chicago)	Zone 3 (Springfield)	Zone 4 (Belleville)	Zone 5 (Marion)
Grocery	107.5	100.1	88.3	75.9	67
High School	57.8	55.6	47.4	40.9	33.5
Office - Low Rise	36.7	32.9	28.6	21.3	17.1
Retail - Strip Mall	37.4	31.1	33.7	27.3	20
Warehouse	54.4	49.9	48.4	41.4	33.3

DEFINITION OF BASELINE EQUIPMENT

The baseline equipment is a garage door with a 1/8-inch gap between the door and the weather-stripping around the perimeter of the door. The bottom of the door is assumed sealed.

DEEMED LIFETIME OF EFFICIENT EQUIPMENT

The expected measure life is assumed to be 20 years

20

DEEMED MEASURE COST

Measure Level Adjustment Tab

#	Measure	Short Measure Name	Program Type	Measure Life (Yrs)	Incremental Measure Cost	Climate Zone	Annual Savings			Lifetime Savings			LN FT	Nicor Gas Territory
							ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms		
4.8.3.1	Commercial Weather Stripping per Linear Ft	Commercial Weather Stripping 1ft	DI	10		2 (Chicago)			3.44			34.4	1	100%
4.8.3.2	Commercial Weather Stripping per Door (3 Linear Ft)	Commercial Weather Stripping 3ft DI	DI	10		2 (Chicago)			10.32			103.2	3	100%
4.8.3.3	Commercial Weather Stripping per Door (3 Linear Ft) Joint	Commercial Weather Stripping 3ft DI Joint	DI	10		2 (Chicago)			10.32			103.2	3	3%

DEFINITION OF BASELINE EQUIPMENT

This measure shall apply to the exterior doors on commercial buildings that are not sealed from the outside environment (i.e., interior vestibule doors would be ineligible) with visible gaps of at least 1/8 inches and up to 3/4 inches along any outside edge of the door. The space on the interior of the door must be conditioned and/or heated, and the calculation methodology will use standard efficiencies of 1.0 kW/ton for cooling and 80% for heating. Electric resistance heating and electric heat pump systems will use coefficients of performance (COPs) of 1.0 and 3.3, respectively.

DEEMED LIFETIME OF EFFICIENT EQUIPMENT

The estimated useful life (EUL) is 10 years

10

DEEMED MEASURE COST

CALCULATION OF ENERGY SAVINGS

ΔkWh = ΔkWh_{weatherstrip} * Length

ΔTherms = ΔTherms_{weatherstrip} * Length

Length = 1 ft

Program Types	DI
	EC

Climate Zone (City based upon)	ΔkWh _{weatherstrip} per linear ft		ΔTherms _{weatherstrip} per linear ft
	Electric Resistance	Heat Pump	
1 (Rockford)	89.4	44.7	3.91
2 (Chicago)	78.6	39.3	3.44
3 (Springfield)	69.2	34.6	3.03
4 (Burlington)	59.9	29.9	2.62
5 (Mankato)	48	24	2.1

Measure Level Adjustment Tab						Annual Savings		Lifetime Savings		Algorithm Inputs						
#	Measure	Short Measure Name	Measure Component	Measure Life (Yrs)	Incremental Cost	Building Type	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	Qlbs	topen	HD	ηHeat
4.8.6.1	Dock Door seals	Dock Door seals	Shell	15	\$3,692.00	All			142			2,132	0.6	1	186.8	0.76
NATURAL GAS SAVINGS																
		Δtherms= Qlbs * topen * HD / ηHeat														
DEFINITION OF BASELINE EQUIPMENT																
Dock doors with no seals or shelters installed to effectively reduce heat loss and air during truck loading and unloading.																
DEEMED MEASURE COST		\$3,692.00		1692	\$0.46	1462										
The capital cost for dock door seals for exterior entryways																
MEASURE LIFE		15														
Input		Details														
Qlbs		Qlbs = rate of sensible heat transfer through the gaps before dock door seal or shelter (therm/hr) $0.6 \text{ Qlbs} = (1.08 \text{ Btu/(hr}^{\circ}\text{F}^{\circ}\text{ft}^2\text{)} \cdot \text{CFMtot}) \cdot (\text{Tth} - \text{Toh}) / (100,000 \text{ Btu/therm})$														
topen		8.25 average hours per day the door is open (hr/day), 8.25 hours or actual (Estimating 1 hours Actual)														
HD		186.8 heating days per year, as defined above - use table below to select an appropriate value, or 55°F if unknown: = efficiency of heating equipment * Distribution Efficiency.														
ηHeat		Actual, if unknown assume code baseline and assume 95% distribution efficiency. For midstream programs, assume a value of 0.76 or 82%.														
CFMtot		1.08 sensible heat transfer coefficient (specific heat of air and unit conversions)														
Tin		1868 Total air flow through gaps (cfm)														
Toh		62 Average indoor air temperature during heating season														
CFMtot		User input, can assume indoor heating temperature set-point														
CFMw		33.34 Average outdoor temp during heating season (°F) use table below, based on binned data from TMY3 & balance point temperature:														
CFMt		1868 , CFMtot, includes both infiltration due to wind as well as thermal forces, as follows: $\text{CFMtot} = \text{sqrt}[(\text{CFMw})^2 + (\text{CFMt2})]$														
vwh		539.2 $\text{CFMw} = (\text{vwh} \cdot \text{Cwh}) \cdot \text{Cv} \cdot \text{La} \cdot (88 \text{ fpm/mpg})$														
Cwh		1788.5 $\text{CFMt} = \text{La} \cdot \text{Cdh} \cdot (60 \text{ sec/min}) \cdot \text{sqrt}[2 \cdot \text{g} \cdot \text{H}/2 \cdot (\text{Tth} - \text{Toh}) / (459.7 + \text{Tth})]$														
Cv		5.13 average wind speed during the heating season (mph) similar to cooling season wind speed assumptions, use the following table to determine average wind speed based on entryway orientation:														
La		0.237														
Cdh		0.3 effectiveness of openings, = 0.3, assumes diagonal wind														
g		16.8 Leakage Area (gap) between doorway and truck (ft2) = 16.8 feet or Actual														
Cdh		0.47165 the discharge coefficient during the heating season: $0.4 + 0.0025 \cdot (\text{Tth} - \text{Toh}) = 0.49$, Illinois average at indoor air temp of 72°F														
H		32.2 acceleration due to gravity = 32.2 ft/sec														
η		8 dock door height (ft)- user defined														
HD = heating days per year, total days in year above balance point temperature (day), 55F unknown																
Input Tables																
Climate Zone		Weather Station/City	45°F	50°F	55°F	60°F	65°F	Customer %								
		1 Rockford AP	142	160	183	204	228	30%								
		2 Chicago O'Hare AP / O'hare	150	166	192	219	253	60%								
		3 Springfield #2 / Springfield	125	142	167	194	230	10%								
		4 Belleville SIU RSCH Belleville	101	115	134	156	180									
		5 Carbondale Southern IL AP / Marion	103	123	148	174	205									
		6 Nicor Gas Average	145.1	161.8	186.8	212	243.2									
Avg Outdoor Air Temp - Heating Season																
Climate Zone		Weather Station/City	45°F	50°F	55°F	60°F	65°F									
		1 Rockford AP	26.3	28.3	31.6	34.2	37.3									
		2 Chicago O'Hare AP / O'hare	29.4	31.2	34	36.8	40.3									
		3 Springfield #2 / Springfield	29.4	31.5	34.6	37.7	41.6									
		4 Belleville SIU RSCH Belleville	31.7	33.6	36.2	39.2	42.3									
		5 Carbondale Southern IL AP / Marion	32.5	34.5	37.8	40.7	44									
		6 Nicor Gas Average	28.47	30.51	33.34	36.11	39.53									
Avg Outdoor Air Temp - Cooling Season																
Climate Zone		Weather Station/City	62°F	67°F	72°F	77°F	82°F									
		1 Rockford AP	72.9	76	79.2	82.5	85.5									
		2 Chicago O'Hare AP / O'hare	72.9	76	79.4	82.8	85.5									
		3 Springfield #2 / Springfield	73.7	76.7	79.9	83.4	86.4									
		4 Belleville SIU RSCH Belleville	74.9	77.7	81	84.3	86.9									
		5 Carbondale Southern IL AP / Marion	75.1	77.7	80.9	84.7	87.4									
		6 Nicor Gas Average	72.98	76.07	79.39	82.77	85.59									
Average Wind Speed during heating season																
Climate Zone		Weather Station/City	N	E	S	W	Average									
		1 Rockford AP	5	4.6	4.9	5.6	5									
		2 Chicago O'Hare AP / O'hare	5.5	5.2	4.9	5.1	5.2									
		3 Springfield #2 / Springfield	5	4.9	5.3	5.1	5.1									
		4 Belleville SIU RSCH Belleville	4.3	4.3	3.4	3.5	4.1									
		5 Carbondale Southern IL AP / Marion	4.6	3.2	4.2	4.4	4.1									
		6 Nicor Gas Average	5.3	4.99	4.94	5.25	5.13									
Wind speed correction																
Climate Zone		Weather Station/City	N	E	S	W	Average									
		1 Rockford AP	0.18	0.13	0.3	0.31	0.23									
		2 Chicago O'Hare AP / O'hare	0.21	0.3	0.26	0.39	0.24									
		3 Springfield #2 / Springfield	0.21	0.14	0.27	0.34	0.24									
		4 Belleville SIU RSCH Belleville	0.31	0.15	0.22	0.29	0.24									
		5 Carbondale Southern IL AP / Marion	0.31	0.13	0.27	0.18	0.22									
		6 Nicor Gas Average	0.201	0.113	0.273	0.363	0.237									

Measure Level Adjustment Tab							Annual Savings			Lifetime Savings			Algorithm Inputs	
#	Measure	Short Measure Name	Measure Component	Measure Life (Yrs)	Incremental Cost	Building Type	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	Tons	SF
4.9.22.1	Warm-Mix Asphalt Water Injection Foaming 1000 tons 50 Truck Loads	Warm-Mix Asphalt WIF 1000 tons	Custom	1		All			275			275	1000.0	0.28
4.9.22.2	Warm-Mix Asphalt Additive 1000 tons 50 Truck Loads	Warm-Mix Asphalt Additive 1000 tons	Custom	1		All			550			550	1000.0	0.55

NATURAL GAS SAVINGS Δtherms= tons X SF

DEFINITION OF BASELINE

The baseline case is traditional HMA. HMA is traditionally mixed between 280°F and 320°F

MEASURE LIFE

1

Input	Value	Details
Qbs	1000.0	Tons of asphalt produced
SF	See table below	WMA production savings factor (therms/ton) See Table for SF for Water Injection Foaming and Additives

WMA Production Technology	[A] Energy Savings (therms/Δ°F/ton)	[B] Temperature Reduction (°F)	[C] = [A]*[B] SF (therms/ton)	Incremental Cost
Water Injection Foaming	0.011	25	0.275	
Additives	0.011	50	0.55	
Custom Documented	0.011	Custom	Calculated	

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Nicor Gas Ex. 1.1
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Final v's Notes

Clarity in algorithm for pipe circumference with insulation

What should the climate zone input be - Chicago versus a near custom?

For Algorithm Variable Crew - need to know how the thickness of the insulation.

Need to confirm glazing value for thickness of insulation to calculate crew

for crew - followed the UFM example, but the result is a choice to the formula in the .tens file

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Received 20 January 2006
Accepted 12 April 2006
Available online 12 May 2006

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Measure Level Adjustment Tab															Annual Savings				Lifetime Savings				Algorithm Inputs					
#	Measure	Short Measure Name	Measure Type	Measure Life (Yrs)	Incremental Cost	Loadshape	Program Type	EFF Measure Type	Climate Zone	Program Year	Household Type	Rebate Type	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	EffH	AFUE(base)	AFUE(eff)	CAPInput	Early Replacement %					
5.3.6.2	Gas High Efficiency Boiler Single-Family AFUE 95% - 2022 onwards	Boilers, >95% AFUE <300 MBH - SF	Boilers	25			TOS	AFUE 95%	2 (Chicago)	2022 onwards	Single-Family				200.88			5,021.90	97%	84%	95.0%	128,844	7%					
5.3.6.4	Gas High Efficiency Boiler Multi-Family AFUE 95% - implemented in 2022 and beyond	Boilers, >95% AFUE <300 MBH - MF	Boilers	25			TOS	AFUE 95%	2 (Chicago)	2022 and beyond	Multi-Family				200.88			5,021.90	97%	84%	95.0%	128,844	7%					
5.3.6.11.1	Gas High Efficiency Boiler Single-Family AFUE 95% implemented in 2022 and beyond - EREP	Boilers, >95% AFUE <300 MBH - SF Early Retire	Boilers	8	\$328	N/A	EREP	AFUE 95%	2 (Chicago)	2022 and beyond	Single-Family	EREP			681.84			5,454.69	97%	62%	95.0%	128,844	7%					
5.3.6.12.1	Gas High Efficiency Boiler Multi-Family AFUE 95% implemented in 2022 and beyond - EREP	Boilers, >95% AFUE <300 MBH - MF Early Retire	Boilers	8	\$328		EREP	AFUE 95%	2 (Chicago)	2022 and beyond	Multi-Family	EREP			681.84			5,454.69	97%	62%	95.0%	128,844	7%					
TRM Algorithm																												
ΔTherms = EFLH * CAPInput * (AFUE(eff) / (AFUE(base) - 1)) / 100000																												
Date: 9/22/2026																												
Measure Code: RS-TRM-EREP-95.0%-25-100000																												
TRM Assumptions Input Values Notes																												

Data Source										Data Processing										Data Analysis										Data Visualization									
Source Information					Processing Details					Analysis Results					Visualization Metrics																								
ID	Name	Type	Status	Version	Method	Step	Time	Success	Errors	Value	Unit	Min	Max	Avg	StDev	Color	Size	Shape	Position	Angle	Opacity	Stroke	Font	Align	Baseline														
4.1.1.1	Big High Efficiency Video Codec (H.265) - 1080p (Constant)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.2	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.3	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.4	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.5	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.6	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.7	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.8	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.9	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.10	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.11	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.12	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.13	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.14	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.15	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															
4.1.1.16	Big High Efficiency Video Codec (H.265) - 1080p (Variable)	Video	Running	1.0	AVC	100	100	100%	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100															

Question	Answer
1. What is the purpose of the research?	The purpose of the research is to investigate the relationship between the use of social media and the level of social capital in a community.
2. What is the research design?	The research design is a quantitative, cross-sectional survey design.
3. What is the sample size and selection method?	The sample size is 300, selected using a simple random sampling method.
4. What are the variables in the study?	The independent variable is the use of social media, and the dependent variable is the level of social capital.
5. What are the hypotheses?	H1: There is a positive relationship between the use of social media and the level of social capital. H2: The relationship between the use of social media and the level of social capital is mediated by the level of trust in the community.
6. What are the data collection methods?	Data were collected using a questionnaire that was distributed to the sample.
7. What are the data analysis methods?	Data were analyzed using SPSS 25.0, using descriptive statistics, Pearson's correlation coefficient, and mediation analysis.
8. What are the results of the study?	The results of the study show a positive relationship between the use of social media and the level of social capital. The relationship is mediated by the level of trust in the community.
9. What are the conclusions and recommendations?	The study concludes that the use of social media can lead to an increase in social capital, but only if there is a high level of trust in the community. Recommendations include promoting the use of social media and building trust in the community.

2025 TRISA7 updates

Series	
01/1/2008	
Real baseline inflation assumption of	2%
SPUR baseline 2 assumption	80%

Storage Capacity (MWh)	Nuclear Gas 2020 Value	1990
1000 MWh	\$1.000	1.000
2000 MWh	\$2.000	2.000
3000 MWh	\$3.000	3.000
4000 MWh	\$4.000	4.000
5000 MWh	\$5.000	5.000

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Table 1: Equipment Data													Table 2: Equipment Data															
S.E.I.I.	Programmable Thermostats												Annual Savings			Lifetime Savings			Significant Impacts					Total Emissions Reduction (tCO2e)				
#	Measure	Short Measure Name	Measure Type	Program Type	Measure LPA (tCO2e)	Capital Cost	Cost Source	Lead/Aggr	Off Measure Type	Heating Fuel	Climate Zone	Heating System	Household Type	AWH	AW	AWH	AWH	AW	AWH	Person	Area (sq ft)	Heating System	Household Type		AWH	AW	AWH	Person
S.E.I.I.1	Programmable Thermostat - (2) - New Programmable Thermostat - Single Family	Programmable Thermostat (2)	Thermostats	DI	56		Actual - SF	Web-based thermostat	New Programmable thermostat	Natural Gas	2 (Single)	Unknown	Single Family	62.31			996.96	2%	1221.0	6.2%	100%	100.00	2.14%	1				
S.E.I.I.2	Programmable Thermostat - (TDS) - New Programmable Thermostat - Single Family	Programmable Thermostat - Point of Sale	Thermostats	TDS	56		TSM	Web-based thermostat	New Programmable thermostat	Natural Gas	2 (Single)	Unknown	Single Family	34.89			558.30	2%	1221.0	6.2%	100%	56.00	2.14%	1				
S.E.I.I.3	Programmable Thermostat - (DI) - Re-programming existing thermostat - Single Family	Thermostat Education (DI)	Thermostats	DI	2			Web-based thermostat	Re-programming existing thermostat	Natural Gas	3 (Single)	Unknown	Single Family	62.31			124.42	2%	1221.0	6.2%	100%	100.00	2.14%	1				
S.E.I.I.4	Programmable Thermostat - (DI - New Programmable Thermostat - MultiFamily)	Programmable Thermostat (DI MF-A)	Thermostats	DI	56			Web-based thermostat	New Programmable thermostat	Natural Gas	2 (Single)	Unknown	MultiFamily	40.50			648.02	2%	1221.0	6.2%	67%	100.00	2.14%	2				
S.E.I.I.5	-(DI) - Re-programming existing thermostat - MultiFamily)	Re-Program Thermostat (DI MF-A)	Thermostats	DI	2			Web-based thermostat	Re-programming existing thermostat	Natural Gas	3 (Single)	Unknown	MultiFamily	40.50			81.00	2%	1221.0	6.2%	67%	100.00	2.14%	1				
S.E.I.I.6	Programmable Thermostat - (DI - Re-programming existing thermostat - MultiFamily)	Re-Program Thermostat (DI MF-CA)	Thermostats	DI	2			Web-based thermostat	Re-programming existing thermostat	Natural Gas	2 (Single)	Unknown	MultiFamily	40.50			81.00	2%	1221.0	6.2%	67%	100.00	2.14%	1				
S.E.I.I.7	Programmable Thermostat - (DI - New Programmable Thermostat - Single Family) Joint	Programmable Thermostat (DI Joint)	Thermostats	DI	56			Web-based thermostat	New Programmable thermostat	Natural Gas	2 (Single)	Unknown	Single Family	62.31			996.96	2%	1221.0	6.2%	100%	100.00	2.14%	1				
S.E.I.I.8	Programmable Thermostat - (DI - Re-programming existing thermostat - Single Family) Joint	Thermostat Education (DI Joint)	Thermostats	DI	2			Web-based thermostat	Re-programming existing thermostat	Natural Gas	2 (Single)	Unknown	Single Family	62.31			124.42	2%	1221.0	6.2%	100%	100.00	2.14%	1				
S.E.I.I.9	Programmable Thermostat - (DI - New Programmable Thermostat - MultiFamily) Joint	Programmable Thermostat (DI MF-AJ Joint)	Thermostats	DI	56			Web-based thermostat	New Programmable thermostat	Natural Gas	2 (Single)	Unknown	MultiFamily	40.50			648.02	2%	1221.0	6.2%	67%	100.00	2.14%	1				
S.E.I.I.10	Programmable Thermostat - (DI - Re-programming existing thermostat - MultiFamily) Joint	Re-Program Thermostat (DI MF-AJ Joint)	Thermostats	DI	2			Web-based thermostat	Re-programming existing thermostat	Natural Gas	3 (Single)	Unknown	MultiFamily	40.50			81.00	2%	1221.0	6.2%	67%	100.00	2.14%	1				
S.E.I.I.11	Programmable Thermostat - (DI - Re-programming existing thermostat - MultiFamily) CA Joint	Re-Program Thermostat (DI MF-CA Joint)	Thermostats	DI	2			Web-based thermostat	Re-programming existing thermostat	Natural Gas	2 (Single)	Unknown	MultiFamily	40.50			81.00	2%	1221.0	6.2%	67%	100.00	2.14%	1				
S.E.I.I.12	Programmable Thermostat - (DI - New Programmable Thermostat - Single Family) All Joint	Programmable Thermostat (DI All Joint)	Thermostats	DI	56			Web-based thermostat	New Programmable thermostat	Natural Gas	2 (Single)	Unknown	Single Family	62.31			996.96	2%	1221.0	6.2%	100%	100.00	2.14%	1				
S.E.I.I.13	Programmable Thermostat - (DI - New Programmable Thermostat - MultiFamily) All Joint	Thermostat Education (DI MF-All Joint)	Thermostats	DI	56			Web-based thermostat	New Programmable thermostat	Natural Gas	2 (Single)	Unknown	MultiFamily	40.50			648.02	2%	1221.0	6.2%	67%	100.00	2.14%	1				

Model Registration	
john@doe.comjohn Doe123 Main St, Suite 100, Springfield, IL 62760 John Doe123 Main St, Suite 100, Springfield, IL 62760 John Doe123 Main St, Suite 100, Springfield, IL 62760	
Model Description	Notes
1. General Information: This model is designed for use in residential buildings with a maximum capacity of 1000 people. It is intended for use in areas with a high population density and is subject to strict safety regulations. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. 2. Safety Features: The model is equipped with a variety of safety features, including fire extinguishers, smoke detectors, and emergency exits. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. 3. Usage: The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments.	1. General Information: This model is designed for use in residential buildings with a maximum capacity of 1000 people. It is intended for use in areas with a high population density and is subject to strict safety regulations. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. 2. Safety Features: The model is equipped with a variety of safety features, including fire extinguishers, smoke detectors, and emergency exits. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. 3. Usage: The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments. The model is designed to be used in a controlled environment and is not intended for use in uncontrolled environments.
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Measure Level Adjustment Tab																																	
													Annual Savings										Lifetime Savings										
													Payback Period																				
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Measure Cost	Loadshape	Furnace Efficiency Before Tune Up	Improvement of Furnace Efficiency	Unit type	Climate	Capacity of Equipment (kW)	AFLUE	ASHW	AWW	ATHWms	ASHW	AWW	ATHWms	Px	Gas Furnace Heating Load	HF	EBBefore	EJ	Convert kWh to Therms	AFLUE	DeratizationGain	Derating post	EFHr	NB	Climate zone	CashFlow_pos	
1.3.13.1	Furnace Tune Up	Furnace Tune Up	Furnaces	RF	3		Residential Electric Space Heat	82%	1.92%	Multifamily	(Chicago)		80%				15.182208				45.55	3.140%	\$3400.000	65.000%	81.400%	1.920%	0.0000%	976.000%	\$3595.3900		976.0000%		-14948.7170

IRMS algorithm $IRMS = \sqrt{\frac{1}{N} \sum_{i=1}^N x_i^2}$ Other Tune Up Programs $IRMS_{\text{tune}} = \sqrt{\frac{1}{N} \sum_{i=1}^N x_i^2}$ Verified Quality Maintenance $IRMS_{\text{tune}} = \sqrt{\frac{1}{N} \sum_{i=1}^N x_i^2}$	
Measure Code	IRMS

Item Assumptions	Input Values	Notes
Heat_Furnace_Heating_Load	TRM table of input values based on climate zone below	Estimate of annual household heating load for gas furnace heated single-family homes. If location is unknown, assume the average below TRM recommends actual if informed by site-specific load calculations, ACCA Manual J or equivalent TRM also has a table of values based on climate zone
Hz		Household factors, to adjust heating consumption for non-single-family households
Efficiency		TRM table of values based on furnace model type
Efficiency		Efficiency of the furnace before the tune-up
AFUE		TRM recommends to use actual information
AFUE		TRM clarifies language on when to measure the efficiency.
AFUE		Note: Contractors should select a mid-level firing rate that appropriately represents the average building operating condition over the course of the heating season and take readings at a consistent firing rate for pre and post tune-up.
AFUE		Efficiency improvement of the furnace tune-up measure
AFUE		TRM recommends to use actual information
AFUE		Furnace Annual Fuel Utilization Efficiency Rating
AFUE		Per TRM - use Actual
AFUE		80% per discussion with MESA, City of Denver (MESA tracks AFUE at around 80%, but Illinois has less condensing furnaces per D&E data, using 80%)
Overattribution	6.40% furnace AFUE lowering before HVAC coil tune-up	The TRM gives this value at 6.4%
Overattribution	10% furnace AFUE lowering after HVAC coil tune-up	The TRM gives this value at 0%
AFUE	3.14% furnace Fan energy consumption as a percentage of annual fuel consumption	TRM gives this value at 3.1%
Conversion factors	25.3 converts kWh per therm	
Measure Life - Other Tune Ups		
Measure Life - Verified Quality Maintenance		
Measure Life - Verified Quality Maintenance		
Measure cost		

Table for AFPU Inputs						
Climate Zone	Gas, Fanpower, Heating, Load (kBtu/h)	AFUE	Heat exchanger Type	or	Heat exchanger Type (default)	
Climate based input			Water Cycles	or	Water Cycles	
1 (HeatEx1)	213	80.9	Water Cycles	or	Water Cycles	
2 (HeatEx2)	214	81		or	Water Cycles	
3 (HeatEx3)	215	81		or		
4 (HeatEx4)	216	81		or		
5 (HeatEx5)	217	81		or		
6 (HeatEx6)	218	81		or		
7 (HeatEx7)	219	81		or		
8 (HeatEx8)	220	81		or		
9 (HeatEx9)	221	81		or		
10 (HeatEx10)	222	81		or		

Notes on AFUE:

TRN tracks the AFUE information and they are finding an average of around 85 AFUE. D+K International presented an argument on the TRM TAC this summer that Illinois has less condensing furnaces than Iowa so it may be more appropriate to use 80 AFUE in Illinois.

Measure Level Adjustment Tab											Annual Savings			Lifetime Savings			Gas Furnace Heating Load	AFUE	SF
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Measure Cost	Loadshape	AFUE	Climate Zone	Capacity of Equipment (Tons)	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms			
5.3.14	Boiler Reset Controls	Boiler Reset Controls	Boilers	RF	16	\$ 612.00	R-08 Residential Cooling		93% 2 (Chicago)	3			65.84	-	-	1,053.41	1218	92.5%	5%

ΔTherms = Gas Boiler Load * (1/AFUE) * Savings Factor

Single family
Multi family

Climate Zone (City based upon)	Gas_Boiler_Load (therms)
1 (Rockford)	1275
2 (Chicago)	1218
3 (Springfield)	1043
4 (Belleville)	805
5 (Marion)	819
Unknown	1158
6 (Nicor Custom)	1218

Household Type	HF
Single-Family	100%
Multi-Family	65%
Actual	Custom

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Measure Level Adjustment Tab

Gas High Efficiency Combination Boiler										Annual Savings				Lifetime Savings			
#	Measure	Short Measure Name	Measure Type	Measure Life (Yrs)	Incremental Cost	Program Type	EFF Measure Type	Climate Zone	Household Type	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms		
5.3.17.1	Gas High Efficiency Combination Boiler Single-Family AFUE 95%	Combination Boilers, >95% AFUE <300 MBH - SF	Boilers	21.5	TOS	AFUE 95%	2 (Chicago)	Single-Family				251.82			5,414.05		
5.3.17.2	Gas High Efficiency Combination Boiler Multi-Family AFUE 95%	Combination Boilers, >95% AFUE <300 MBH - MF	Boilers	21.5	TOS	AFUE 95%	2 (Chicago)	Multi-Family				241.51			5,192.50		
5.3.17.3	Gas High Efficiency Combination Boiler Single-Family AFUE 95% IQ	Combination Boilers, >95% AFUE <300 MBH - SF IQ	Boilers	21.5	TOS	AFUE 95%	2 (Chicago)	Single-Family				262.42			5,414.05		
5.3.17.4	Gas High Efficiency Combination Boiler Multi-Family AFUE 95% IQ	Combination Boilers, >95% AFUE <300 MBH - MF IQ	Boilers	21.5	TOS	AFUE 95%	2 (Chicago)	Multi-Family				245.59			5,280.25		

TRM Algorithm
 $\Delta \text{Therms} = \Delta \text{ThermBoiler} + \Delta \text{ThermWH}$
 $\Delta \text{Therms} = \text{EFLH} * \text{CAPInput} * (\text{AFUE}(\text{eff}) / \text{AFUE}(\text{base}) - 1) / 100000$ See 5.3.6
 $\Delta \text{ThermsWH} = (1 / \text{UEFB} - 1 / \text{UEFEff}) * (\text{GPD} * \text{Household} * 365.25 * \text{yWater} * (\text{TOUT} - \text{TIN}) * 1.0) / 100,000$ See 5.4.2

Climate Zone	EFLH
1 (Rockford)	1022
2 (Chicago)	976
3 (Springfield)	836
4 (Belleville)	645
5 (Marion)	656
Weighted Average	928
Weighted Average	928

TRM Assumptions	Input Values	TRM Description Notes
AFUE(base)	84%	Baseline Boiler Annual Fuel Utilization Efficiency Rating
		On January 15, 2021, the federal minimum residential boiler efficiency is scheduled to increase to 84% AFUE. However, these new appliance standards will not be adopted by this measure characterization until January 1, 2022.
AFUE(eff)	95.0%	Efficient Boiler Annual Fuel Utilization Efficiency Rating
		Actual. If unknown, use defaults dependent on tier: 93.5% for AFUE ≥ 90%, 95% for AFUE ≥ 95%
Measure Life	21.5	The expected measure life is assumed to be 21.5 years
Incremental Cost		

Household Unit Type	Household [1]		
	IQ Participants	Non-IQ Participants	All Participants
Single-Family - Deemed	2.76	2.62	2.67
Multi-Family - Deemed	2.3	2.09	2.18
Household Type Unknown			2.46
Custom	Actual Occupancy or Number of Bedrooms[3]		

[Measure Level Adjustment Tab](#)

#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Gas Heating Load	μBoiler	#Radiators	%TRVSavings		Annual Savings				Lifetime Savings	
												ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
5.3.19.1	Thermostatic Radiator Valves	Thermostatic Radiator Valves	Boilers	RF	15		542	75%	5	15%				21.68			325.20

NATURAL GAS SAVINGS

ΔTherms = Gas_Heating_Load/μBoiler * #Radiators) * %TRVSavings

DEFINITION OF BASELINE EQUIPMENT

The baseline is an existing hydronic or steam heated radiator without a TRV installed.

DEEMED MEASURE COST

COINCIDENCE FACTOR

Climate Zone (City based upon)	Gas_Heating_Load per Multi Family unit (Therms)
1 (Rockford)	567
2 (Chicago)	542
3 (Springfield)	454
4 (Belleville)	338
5 (Marion)	365
Average	525

μBoiler 75%

#Radiators 5

%TRVSavings 15%
Estimate of heating consumption savings from installing a TRV
15% when part of a system balancing project to address overheated spaces
5% if installed without system balancing

[Measure Level Adjustment Tab](#)

Annual Level Additions		Air Handler Filter										Annual Savings										LifeTime Savings				TEADOT		Regulation Index									
#	Measure	Air Handler Filter	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Measure Cost	Loadshape	Climate Zone	J&W	J&W	A/Ethers	J&W	J&W	A/Ethers	Total Measures	Measure Life	Total Cost	Mechanical	Gas, Piping & Controls System	Ventilation	FRLNAC	NAC	Other	WaterUse	Nickel Gas	Z _{max}	Z _{min}									
53.21	Measure Air Handler Filter Cleaning/Replacement	Air Handler Filter	HVAC			3	\$ 50.00		New Custom	47.14	1.4904	105.05	141.43	4.35	30.14	90.42	3.00	\$0.00	100%	1.00%	0.0%	0.377	975,800	83.50%	33%	0.1	1	46.6	0.68								

[illegible]

Tables for Algorithm Inputs:

Climate Zone (City based option)	Gas Heating Consumption (Btu/m ²)
1 (Heating)	1,052
2 (Cooling)	1,020
3 (Heating)	861
4 (Cooling)	795
5 (Heating)	678
6 (Cooling)	591
Other Gas Location	0.00

Heating Fuel	Efficiency
Electric	98%
Natural Gas	90.0%
Propane	90%

Climate Zone (City based option)	ETM for Furnaces	ETM for Central Heat Pumps
1 (Heating)	1,052	1,044
2 (Cooling)	978	1,036
3 (Heating)	835	1,028
4 (Cooling)	745	1,020
5 (Heating)	635	1,012
6 (Cooling)	550	1,004
Other Gas Location	0.00	1,004

Heating Fuel	Efficiency
Electric	98%
Natural Gas	90.0%
Propane	90%

Climate Zone (City based option)	ETM _{cool}
1 (Heating)	223
2 (Cooling)	108
3 (Heating)	102
4 (Cooling)	223
5 (Heating)	223
6 (Cooling)	223
Other Gas Location	0.00

[illegible]

[illegible]

Project Overview										Resource Allocation										Financial Summary										Risk Assessment												
Project ID	Project Name	Project Manager	Project Status	Project Phase	Project Start	Project End	Project Duration	Project Budget	Project Cost	Resource ID	Resource Name	Resource Type	Resource Status	Resource Availability	Resource Skillset	Resource Experience	Resource Location	Resource Contact	Resource Email	Resource Phone	Resource Address	Resource City	Resource State	Resource Zip	Resource Country	Resource Currency	Resource Tax	Resource Insurance	Resource License	Resource Permit	Resource Certificate	Resource Training	Resource Certification	Resource Accreditation	Resource Registration	Resource Membership	Resource Association	Resource Organization				
0001	Project Alpha	John Doe	Active	Phase 1	2023-01-01	2023-03-31	90 Days	\$1,000,000	\$500,000	001	John Doe	Project Manager	Available	100%	PM, BA, QA	10 Years	New York	John.Doe@alpha.com	john.doe@alpha.com	212-555-1234	123 Main St	New York	NY	10001	USA	USD	10%	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M			
0002	Project Beta	Jane Smith	Completed	Phase 2	2023-04-01	2023-06-30	90 Days	\$800,000	\$800,000	002	Jane Smith	Project Manager	Completed	100%	PM, BA, QA	8 Years	Los Angeles	Jane.Smith@beta.com	jane.smith@beta.com	310-555-5678	456 Main St	Los Angeles	CA	90001	USA	USD	10%	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	
0003	Project Gamma	Mike Johnson	On Hold	Phase 3	2023-07-01	2023-09-30	90 Days	\$1,200,000	\$600,000	003	Mike Johnson	Project Manager	On Hold	50%	PM, BA, QA	12 Years	Chicago	Mike.Johnson@gamma.com	mike.johnson@gamma.com	773-555-9012	789 Main St	Chicago	IL	60601	USA	USD	10%	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	
0004	Project Delta	Sarah Lee	Active	Phase 4	2023-10-01	2023-12-31	90 Days	\$900,000	\$450,000	004	Sarah Lee	Project Manager	Active	75%	PM, BA, QA	9 Years	San Francisco	Sarah.Lee@delta.com	sarah.lee@delta.com	415-555-3456	101 Main St	San Francisco	CA	94101	USA	USD	10%	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	
0005	Project Epsilon	David Kim	Active	Phase 5	2024-01-01	2024-03-31	90 Days	\$1,100,000	\$550,000	005	David Kim	Project Manager	Active	60%	PM, BA, QA	11 Years	Seattle	David.Kim@epsilon.com	david.kim@epsilon.com	206-555-7890	202 Main St	Seattle	WA	98101	USA	USD	10%	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	
0006	Project Zeta	Emily White	Active	Phase 6	2024-04-01	2024-06-30	90 Days	\$750,000	\$375,000	006	Emily White	Project Manager	Active	80%	PM, BA, QA	7 Years	Portland	Emily.White@zeta.com	emily.white@zeta.com	503-555-2345	303 Main St	Portland	OR	97201	USA	USD	10%	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	
0007	Project Eta	Chris Brown	Active	Phase 7	2024-07-01	2024-09-30	90 Days	\$1,300,000	\$650,000	007	Chris Brown	Project Manager	Active	40%	PM, BA, QA	13 Years	Phoenix	Chris.Brown@eta.com	chris.brown@eta.com	602-555-6789	404 Main St	Phoenix	AZ	85001	USA	USD	10%	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M
0008	Project Theta	Alex Green	Active	Phase 8	2024-10-01	2024-12-31	90 Days	\$850,000	\$425,000	008	Alex Green	Project Manager	Active	90%	PM, BA, QA	6 Years	Denver	Alex.Green@theta.com	alex.green@theta.com	303-555-0123	505 Main St	Denver	CO	80201	USA	USD	10%	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M
0009	Project Iota	Mia Black	Active	Phase 9	2025-01-01	2025-03-31	90 Days	\$1,050,000	\$525,000	009	Mia Black	Project Manager	Active	70%	PM, BA, QA	8 Years	San Diego	Mia.Black@iota.com	mia.black@iota.com	619-555-4567	606 Main St	San Diego	CA	92101	USA	USD	10%	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M	10M
0010	Project Kappa	Noah Grey	Active	Phase 10	2025-04-01	2025-06-30	90 Days	\$950,000	\$475,000	0																																

Project Overview

Project Name

Project Manager

Project Status

Project Phase

Project Start

Project End

Project Duration

Project Budget

Project Cost

Resource Allocation

Resource ID

Resource Name

Resource Type

Resource Status

Resource Availability

Resource Skillset

Resource Experience

Resource Location

Resource Contact

Resource Email

Resource Phone

Resource Address

Resource City

Resource State

Resource Zip

Resource Country

Resource Currency

Resource Tax

Resource Insurance

Resource License

Resource Permit

Resource Certificate

Resource Training

Resource Certification

Resource Accreditation

Resource Registration

Resource Membership

Resource Association

Resource Organization

Financial Summary

Revenue

Cost

Profit

Margin

ROI

NPV

IRR

Payback Period

Break-Even Point

Net Income

Operating Income

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Measure Level Adjustment Tab																										
Water Heater Temperature Setback																										
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Cost Source	Loadshape	Unit Type	Tank Capacity	DHW Fuel	Annual Savings			Lifetime Savings			Algorithm Inputs								
												ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms	Tpre	Tpost	Hours	CF	RE gas	U	A	ISR	
5.4.6.1	Water Heater Temperature Setback Single Family	WH Set Back - SF	Water heater	DI	2			R03- Residential Electric DHW	Single Family	50	Natural Gas				1.3			2.52	142.3	136.9	8766	1	0.78	0.083	24.99	100%
5.4.6.2	Water Heater Temperature Setback Multi Family	WH Set Back - MF	Water heater	DI	2			R03- Residential Electric DHW	Multi Family	50	Natural Gas				1.5			2.93	142.3	136.9	8766	1	0.67	0.083	24.99	100%

TRM Algorithm	
For electric DHW systems:	
$\Delta kWh = (U * A * (T_{pre} - T_{post}) * \text{Hours} * ISR) / (2412 * RE_electric)$	
$\Delta kW = \Delta kWh / \text{Hours} * CF$	
For Natural Gas DHW systems:	
$\Delta Therms = (U * A * (T_{pre} - T_{post}) * \text{Hours}) * (ISR) / (100,000 * RE_gas)$	
Date:	9/22/2026
Measure Code:	RS-HVAC-TRMPS-V08-19C005

TRM Assumptions	Input Values	Notes
Type	see table below	Actual hot water setpoint prior to adjustment
Tpost	see table below	Actual new hot water setpoint, which may not be lower than 120 degrees
Hours	8766	Number of hours in a year (since savings are assumed to be constant over year). This is a deemed TRM value
RE gas		Recovery efficiency of gas water heater Deemed values from the TRM where use 78% for Single Family homes and 67% for Multifamily Homes
U	0.083	Overall heat transfer coefficient of tank (Btu/hr-F-ft2) Actual if known. If unknown assume deemed TRM value of R-12, U = 0.083
A		Surface area of storage tank (square feet) Actual if known. If unknown use the deemed table values defined in the TRM based on capacity of tank. If capacity unknown assume 50 gal tank; A = 24.99ft
CF	1	Summer Peak Coincidence Factor for measure This is a deemed value from the TRM
ISR	see table below	in service rate of measure
Measure Life	2	The assumed lifetime of the measure is 2 years. This is a deemed TRM value
Incremental Cost		

Tables for Algorithm inputs	
Incremental Cost	

Deemed Savings table				
Delivery method	System	kWh savings	kW savings	Therm Savings SF Therm Savings MF
Distributed School Efficient Kit Instructions	Elec	4.24	0.0005	0.18 0.23
	Gas	5.87	0.0007	0.25 0.29
	Other	3.37	0.0004	0.14 0.17
All other kits programs	Elec	2.12	0.0002	0.09 0.11
	Gas	2.94	0.0003	0.11 0.15
	Other	1.68	0.0002	0.07 0.08
Non-Kit program	Elec	120.72	0.0138	5.17 6.02
	Gas	120.72	0.0138	5.17 6.02
	Other	120.72	0.0138	5.17 6.02

Delivery method	ISR
Distributed School Efficient Kit Instructions	20%
Instructions provided in all other kit programs	10%
All other	100%

RE gas lookup table (Deemed TRM Values)	
Single Family	78%
Multi Family	67%

A (Deemed TRM Values)	
Capacity (gal)	A (ft2)
10	19.16
40	23.18
60	24.09
80	31.84

Program Type	
NC	New Construction
RF	Renovate
DI	Direct Install

Default Hot Water Temperature Inputs		
Delivery Method	System Type	Temp
Distributed school	Electric	141.0
efficient kit instructions,	Gas	142.3
instructions provided in all	Other	140.8
other[2]	Electric	141.0
	Gas	142.3
	Other	140.8

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Thermaclear Restrictor Shower Valve																																							
#	Measure	Short Measure Name	Measure Type	Program Type	Measure Life (Yrs)	Horizontal Cdn Source	GHS	Landscape	DHW Fuel	Household Unit Type	Annual Savings						Lifetime Savings																						
											A kWh	A \$ kWh	A Therms	A Aggr.	A kWh	A \$ kWh	A Therms	A Aggr.	A kWh	A \$ kWh	A Therms	A Aggr.																	
										Electricity kWh	Propane \$	Oil \$	Aggr.	Electricity kWh	Propane \$	Oil \$	Aggr.	Electricity kWh	Propane \$	Oil \$	Aggr.																		
S.A.R.1	Thermaclear Restrictor Shower Valve Single Family	Shower Restrictor Valve, SF	Low-Flow Returns	DI	10	5	30.00	TSM	R22 - Residential Electric DSHW	Natural Gas	Single-Family	-	-	1.78	746.99	-	-	37.42	7,609.94	0	2.67	0.89	2.64	0.6	1.75	0.117	0.98	34.4	28.24	0.0022	0.00001								
S.A.R.2	Thermaclear Restrictor Shower Valve Multi-Family	Shower Restrictor Valve, MF	Low-Flow Returns	DI	10	5	30.00	TSM	R22 - Residential Electric DSHW	Natural Gas	Multi-Family	-	-	4.64	795.37	-	-	46.37	7,930.37	0	2.67	0.89	2.68	0.6	1.3	0.117	0.98	28.3	27.38	0.0022	0.00043								
S.A.R.3	Thermaclear Restrictor Shower Valve Single Family IQ	Shower Restrictor Valve, SF	Low-Flow Returns	DI	10	5	30.00	TSM	R22 - Residential Electric DSHW	Natural Gas	Single-Family IQ	-	-	3.94	786.91	-	-	39.42	7,869.10	0	2.67	0.89	2.76	0.6	1.3	0.117	0.98	34.4	29.75	0.0022	0.00001								
S.A.R.4	Thermaclear Restrictor Shower Valve Multi-Family IQ	Shower Restrictor Valve, MF	Low-Flow Returns	DI	10	5	30.00	TSM	R22 - Residential Electric DSHW	Natural Gas	Multi-Family IQ	-	-	5.10	875.29	-	-	51.03	8,772.29	0	2.67	0.89	2.3	0.6	1.3	0.117	0.98	34.3	31.3	0.0022	0.0001								

$$\Delta W = \Delta ElectricDRM * ([GPM_base_S * L_showerdevice] * Household * SPCD * 365.25 / SPH) * EPG_ElectricDRM$$

Incremental Cost table

TRM	
Actual	

IRM V5 notes

DHW fuel	%Electric DHW	%Fossil DHW
Electric	100%	0%
Natural Gas	0%	100%

B23-G29.125 AE3-AE6

City	Single Family	Single Family Low Income	Multi-Family	Multi-Family Low Income	Linkages
Alameda	88.43%	68.81%	96.33%	82.33%	68.81%
Contra Costa	92.03%	79.52%	97.02%	93.02%	97.02%
Marin	97.02%	98.00%	98.00%	97.02%	97.02%
North Contra Costa	98.00%	98.00%	98.00%	97.02%	97.02%
San Francisco	98.00%	98.00%	98.00%	97.02%	97.02%
San Jose	98.00%	98.00%	98.00%	97.02%	97.02%

Household Unit Type	Household	SPW	Rate
Single-family AG	2.76	1.75	0.1
Multi-family AG	2.3	1.3	0.1
Single-family AD	2.62	1.79	0.1
Multi-family AD	2.09	1.3	0.1
Single-family AB	2.63	1.79	0.1
Multi-family AB	2.18	1.3	0.1
Unknown	2.46	1.64	0.1

		GPU		
Program	GPU_base	SI	MR	Notes
DOS	2.35	24.0	24.0	
MP	2.35	30.3	24.0	
MC				rated or actual flow of program-installed showerhead
MP	2.41	34.4	28.3	
SLF custom	2.61			Custom Shower head must installed to account for custom USA

Annual Savings											Lifetime Savings				Appliance Inputs											
#	Measure	Short Measure Name	Measure Type	Common Area or in DR	Program Type	Measure Life (months)	Common Area or in DR	Cost Source	Loadship kWh/Ft ²	DR Band	Standard Unit Type	ASWH	ASW	ATherms	ApplGas	ASWH	ASW	ATherms	ApplGas	Gas (therms)	Water (gals)	Electric (kWh)	Gas (therms)	Water (gals)	Electric (kWh)	
A.3.8.1	Shower Times, SF - DL, Natural Gas, Single-Family	Shower Times, SF	Low-Flow Fixtures	DR	2	TRM	Resident at Electric (200V)	Natural Gas	Single-Family	-	6.07	737.31	8.13	1,514.82	0.000	1.10	7.8	5.70	2.62	365.20	0.0	0.34	0.125	2.789	1.00	0.0000
A.3.8.2	Shower Times, MF - DL, Natural Gas, Multi-Family	Shower Times, MF	Low-Flow Fixtures	DR	2	TRM	Resident at Electric (200V)	Natural Gas	Multi-Family	-	5.78	694.12	7.55	1,208.23	0.000	1.10	7.8	5.70	2.09	365.20	0.0	0.34	0.125	2.789	1.00	0.0000
A.3.8.3	Shower Times IEA K8	Shower Times IEA K8	Low-Flow Fixtures	K8	2	TRM	RIS - Res Unknown		Single-Family	-	5.78	737.31	7.52		0.000	1.10	7.8	5.70	2.62	365.20	0.0	0.34	0.125	2.789	0.934	0.0000
A.3.8.4	Shower Times, SF - DL, Natural Gas, Single-Family (C)	Shower Times, SF	Low-Flow Fixtures	DR	2	TRM	Resident at Electric (200V)	Natural Gas	Single-Family (C)	-	4.40	739.78	8.57	1,550.34	0.000	1.10	7.8	5.70	2.70	365.20	0.0	0.34	0.125	2.789	1.00	0.0000
A.3.8.5	Shower Times, MF - IE, Natural Gas, Multi-Family (C)	Shower Times, MF	Low-Flow Fixtures	IE	2	TRM	Resident at Electric (200V)	Natural Gas	Multi-Family (C)	-	4.40	664.67	8.31	1,329.63	0.000	1.10	7.8	5.70	3.1	365.20	0.0	0.34	0.125	2.789	1.00	0.0000

TBM Algorithm	
Load =	SELECTOR * GRM * (I_base - I_timer) * Household * Days/yr * SPD * UsageFactor * EFG_Electric
WWR =	WWR/Hours * CF
WTherm =	WSELECTOR * GRM * (I_base - I_timer) * Household * Days/yr * SPD * UsageFactor * EFG_Gas
WCalori =	GRM * (I_base - I_timer) * Household * UsageFactor * 365.25

[illegible]

Tables for Algorithms inputs									
------------------------------	--	--	--	--	--	--	--	--	--

Data Table			Data Table	
State	Revenue	Cost	Revenue	Cost
Alabama	100%	0%	100%	0%
Alaska	100%	0%	100%	0%
Arizona	100%	0%	100%	0%
Arkansas	100%	0%	100%	0%
California	100%	0%	100%	0%
Colorado	100%	0%	100%	0%
Connecticut	100%	0%	100%	0%
Delaware	100%	0%	100%	0%
Florida	100%	0%	100%	0%
Georgia	100%	0%	100%	0%
Hawaii	100%	0%	100%	0%
Idaho	100%	0%	100%	0%
Illinois	100%	0%	100%	0%
Indiana	100%	0%	100%	0%
Iowa	100%	0%	100%	0%
Kansas	100%	0%	100%	0%
Kentucky	100%	0%	100%	0%
Louisiana	100%	0%	100%	0%
Maine	100%	0%	100%	0%
Maryland	100%	0%	100%	0%
Massachusetts	100%	0%	100%	0%
Michigan	100%	0%	100%	0%
Minnesota	100%	0%	100%	0%
Mississippi	100%	0%	100%	0%
Missouri	100%	0%	100%	0%
Montana	100%	0%	100%	0%
Nebraska	100%	0%	100%	0%
Nevada	100%	0%	100%	0%
New Hampshire	100%	0%	100%	0%
New Jersey	100%	0%	100%	0%
New Mexico	100%	0%	100%	0%
New York	100%	0%	100%	0%
North Carolina	100%	0%	100%	0%
North Dakota	100%	0%	100%	0%
Ohio	100%	0%	100%	0%
Oklahoma	100%	0%	100%	0%
Oregon	100%	0%	100%	0%
Pennsylvania	100%	0%	100%	0%
Rhode Island	100%	0%	100%	0%
South Carolina	100%	0%	100%	0%
South Dakota	100%	0%	100%	0%
Tennessee	100%	0%	100%	0%
Texas	100%	0%	100%	0%
Utah	100%	0%	100%	0%
Vermont	100%	0%	100%	0%
Virginia	100%	0%	100%	0%
Washington	100%	0%	100%	0%
West Virginia	100%	0%	100%	0%
Wisconsin	100%	0%	100%	0%
Wyoming	100%	0%	100%	0%

GPM	1.93
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Program	
Single-Family	0.00513
Multi-Family	0.00621
Single-Family (2)	0.00513
Lease-Purchase	0.00445

Incremental Cost table	
TSM	12
Actual-handheld showerhead	12
Actual-showerhead	8.9
MF DI	18
SF DI	18

5. Equal Share Lookups					
Utility	Single Family	Single Family Low Income	Multi Family	Multi Family Low Income	Unknown
Advantus	80.20%	69.40%	76.70%	82.70%	68.6%
Camel	88.10%	78.50%	17.00%	15.60%	67.8%
People's Gas	97.50%	98.00%	98.30%	97.60%	97.8%
Northland Gas	98.50%	88.20%	90.00%	87.60%	97.3%
Norco Gas	92.40%	90.30%	85.40%	77.40%	90.0%
AM Gas					

	% Electric home ownership				
Utility	Single Family	Single Family low income	Multi Family	Multi Family low income	Unknown
American	19.70%	30.00%	63.30%	67.33%	31
ConEd	14.00%	21.50%	43.00%	48.43%	32
People's Gas	2.50%	2.00%	1.70%	2.40%	2
Northeast Gas	1.50%	0.80%	10.00%	2.40%	2
Norstar Gas	7.40%	9.90%	14.40%	22.60%	10
All Gas					

Measure Level Adjustment Tab												Annual Savings			Lifetime Savings		
#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Building Type	GPM	Persons	Units	RE	ΔkWh	ΔkW	ΔTherms	ΔkWh	ΔkW	ΔTherms
5.4.11.1	Drain Water Heat Recovery - SF	Drain Water Heat Recovery - SF	Water heater	DI	30		Single Family	2.35	2.62	1	0.79						
5.4.11.2	Drain Water Heat Recovery - MF Central Water System 5 Plus Units	Drain Water Heat Recovery - MF	Water heater	DI	30		Multi Family	2.35	2.09	5	0.67			122.35			3,670.00
5.4.11.3	Drain Water Heat Recovery - MF IQ Central Water System 5 Plus Units	Drain Water Heat Recovery - MF IQ	Water heater	DI	30		Multi Family	2.35	2.3	5	0.67			134.63			4,038.75

NATURAL GAS SAVINGS

$$\text{kWh} = \frac{(\text{ShowerTemp} - \text{SupplyTemp}) \times 8.33 \frac{\text{BTU}}{\text{gal} \cdot ^\circ\text{F}} \times \text{GPM} \times T_{\text{shower-length}} \times \text{Household} \times N_{\text{usage}} \times \text{SPCD} \times 365.25 \frac{\text{days}}{\text{yr}} \times \text{SF}}{3412 \frac{\text{BTU}}{\text{kWh}} \times \text{RE}}$$

DEFINITION OF BASELINE EQUIPMENT

DEFINITION OF BASELINE EQUIPMENT
The baseline condition is a storage type water heater without DWHR devices in a residential application.

DEEMED MEASURE COST

COINCIDENCE FACTOR

COINCIDENCE FACTOR		
ShowerTemp	assumed water temperature during shower	101 °F

SupplyTemp assumed temperature of cold water entering house 50.7 °F

8.33 Energy required (BTU) to heat one gallon of water by one degree Fahrenheit

GPM gallon per minute, flow rate of showerhead

2.35	Gallon/minute for direct installed showerheads
2.35	Gallon/minute for retrofit, efficiency kits, NC or TOS

Program Type	GPM
DI	2.35
RF	2.35
NC	2.35

Tshower-length shower length in minutes

7.8 minute

Household average number of people per household

Household Unit Type	Household
Single-Family	
Multi-Family	
Household type unknown	

Units Number of units in a multifamily building with drains connected to the DWHR unit

Household Unit Type	N _{units}
Single-Family	1
Multi-Family	5

or Actual

SPCD Showers Per Capita Per Day

0.6

365.25 Days per year, on average

SF Water heating energy savings factor

Water heating energy savings factor	0.466
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100,000 Conversion factor, 1 therm equals 100,000 BTU

RE efficiency of gas water heater

Household Unit Type	RE
Single-Family	79%
Multi-Family	67%

Household lookup for average number of people per household			
Household Unit Type	IQ Participants	Non-IQ Participants	All Participants
Single-Family	2.76	2.62	2.69
Multi-Family	2.3	2.09	2.2
Household Type Unknown			2.4
Custom	Actual Occ. or No of Bdrms	Actual Occ. or No of Bdrms	Actual Occ. or No of Bdrms

Planning Assumption 5 units - Nicor Gas - Central Water System in MF Building - 5 or more units

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Master Co. - Residential RSI

Measure - Residential Weatherization RSI

Year 0-1

Measure Assumptions

Best Measure Name	RSI	Estimated Total Netted Income (per year)	Gross Energy Savings \$/yr	Measure Life, Yr	Quantity	Climate Data	Price	Efficiency	Gross Therm Savings / Year \$/yr	Gross kWh Savings / kWh/yr	Gross kWh Savings with Unknown Leaking
1) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 7.50	1	0.80
2) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	17	6 (6) per unit	\$ 1.00	5	0.80
3) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
4) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
5) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
6) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
7) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
8) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
9) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
10) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
11) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
12) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
13) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
14) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
15) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
16) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
17) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
18) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
19) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
20) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
21) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
22) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
23) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
24) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
25) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
26) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
27) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
28) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
29) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
30) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
31) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
32) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
33) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
34) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
35) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
36) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
37) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
38) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
39) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
40) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
41) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
42) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
43) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
44) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
45) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
46) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
47) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
48) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
49) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
50) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
51) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
52) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
53) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
54) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
55) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
56) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
57) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
58) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
59) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
60) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
61) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
62) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
63) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
64) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
65) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
66) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
67) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
68) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
69) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
70) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
71) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
72) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
73) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
74) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
75) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
76) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
77) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
78) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
79) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
80) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
81) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
82) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
83) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
84) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
85) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
86) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
87) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
88) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2000	2000	10	6 (6) per unit	\$ 1.00	5	0.80
89) Pack of 20 (20) and 40 (40) North Green Glazed 20x30 Sashes	0.75	0.45	2.85	1.80	2						

Measure Assumptions					
Item Measure Name	Measure Life (YTD)	Quantity	Climate Zone	Prop	\$/sqm
2021					
1.000	20	20.00	1	1	1.000
2.000	20	20.00	1	1	2.000
3.000	20	20.00	1	1	3.000
4.000	20	20.00	1	1	4.000
5.000	20	20.00	1	1	5.000
6.000	20	20.00	1	1	6.000
7.000	20	20.00	1	1	7.000
8.000	20	20.00	1	1	8.000
9.000	20	20.00	1	1	9.000
10.000	20	20.00	1	1	10.000
11.000	20	20.00	1	1	11.000
12.000	20	20.00	1	1	12.000
13.000	20	20.00	1	1	13.000
14.000	20	20.00	1	1	14.000
15.000	20	20.00	1	1	15.000
16.000	20	20.00	1	1	16.000
17.000	20	20.00	1	1	17.000
18.000	20	20.00	1	1	18.000
19.000	20	20.00	1	1	19.000
20.000	20	20.00	1	1	20.000
21.000	20	20.00	1	1	21.000
22.000	20	20.00	1	1	22.000
23.000	20	20.00	1	1	23.000
24.000	20	20.00	1	1	24.000
25.000	20	20.00	1	1	25.000
26.000	20	20.00	1	1	26.000
27.000	20	20.00	1	1	27.000
28.000	20	20.00	1	1	28.000
29.000	20	20.00	1	1	29.000
30.000	20	20.00	1	1	30.000
31.000	20	20.00	1	1	31.000
32.000	20	20.00	1	1	32.000
33.000	20	20.00	1	1	33.000
34.000	20	20.00	1	1	34.000
35.000	20	20.00	1	1	35.000
36.000	20	20.00	1	1	36.000
37.000	20	20.00	1	1	37.000
38.000	20	20.00	1	1	38.000
39.000	20	20.00	1	1	39.000
40.000	20	20.00	1	1	40.000
41.000	20	20.00	1	1	41.000
42.000	20	20.00	1	1	42.000
43.000	20	20.00	1	1	43.000
44.000	20	20.00	1	1	44.000
45.000	20	20.00	1	1	45.000
46.000	20	20.00	1	1	46.000
47.000	20	20.00	1	1	47.000
48.000	20	20.00	1	1	48.000
49.000	20	20.00	1	1	49.000
50.000	20	20.00	1	1	50.000
51.000	20	20.00	1	1	51.000
52.000	20	20.00	1	1	52.000
53.000	20	20.00	1	1	53.000
54.000	20	20.00	1	1	54.000
55.000	20	20.00	1	1	55.000
56.000	20	20.00	1	1	56.000
57.000	20	20.00	1	1	57.000
58.000	20	20.00	1	1	58.000
59.000	20	20.00	1	1	59.000
60.000	20	20.00	1	1	60.000
61.000	20	20.00	1	1	61.000
62.000	20	20.00	1	1	62.000
63.000	20	20.00	1	1	63.000
64.000	20	20.00	1	1	64.000
65.000	20	20.00	1	1	65.000
66.000	20	20.00	1	1	66.000
67.000	20	20.00	1	1	67.000
68.000	20	20.00	1	1	68.000
69.000	20	20.00	1	1	69.000
70.000	20	20.00	1	1	70.000
71.000	20	20.00	1	1	71.000
72.000	20	20.00	1	1	72.000
73.000	20	20.00	1	1	73.000
74.000	20	20.00	1	1	74.000
75.000	20	20.00	1	1	75.000
76.000	20	20.00	1	1	76.000
77.000	20	20.00	1	1	77.000
78.000	20	20.00	1	1	78.000
79.000	20	20.00	1	1	79.000
80.000	20	20.00	1	1	80.000
81.000	20	20.00	1	1	81.000
82.000	20	20.00	1	1	82.000
83.000	20	20.00	1	1	83.000
84.000	20	20.00	1	1	84.000
85.000	20	20.00	1	1	85.000
86.000	20	20.00	1	1	86.000
87.000	20	20.00	1	1	87.000
88.000	20	20.00	1	1	88.000
89.000	20	20.00	1	1	89.000
90.000	20	20.00	1	1	90.000
91.000	20	20.00	1	1	91.000
92.000	20	20.00	1	1	92.000
93.000	20	20.00	1	1	93.000
94.000	20	20.00	1	1	94.000
95.000	20	20.00	1	1	95.000
96.000	20	20.00	1	1	96.000
97.000	20	20.00	1	1	97.000
98.000	20	20.00	1	1	98.000
99.000	20	20.00	1	1	99.000
100.000	20	20.00	1	1	100.000

$$\Delta \text{therm} = (\Delta \text{therm}_{\text{masket}} * \text{masket} + \Delta \text{therm}_{\text{window}} * \text{window} + \Delta \text{therm}_{\text{whee}} * \text{whee} + \Delta \text{therm}_{\text{sealing}} * \text{sealing} + \Delta \text{therm}_{\text{WX}} * \text{WX} + \Delta \text{therm}_{\text{Airsealing}} * \text{Airsealing})$$

Solarshield® - Annual thermal savings from installation of air sealing gasket on an electric outlet
 gasket - Number of gaskets installed
 Thermowall® - Annual thermal savings from installation of Divix-FD Windows 66
 Windows - Square footage of double- or triple-glazed windows
 Weatherstripping - Annual thermal savings from installation of door sweeps
 Sweeps - Number of sweeps installed
 Weatherstripping - Annual thermal savings from use of caulking, sweeps, or polyethylene tape
 Sweeps - Linear feet of caulking, sweeps, or polyethylene tape
 Weatherstripping - Annual thermal savings from use of caulking, weatherstripping or door weatherstripping
 Weatherstripping - Linear feet of window weatherstripping or door weatherstripping
 Weatherstripping - Annual thermal savings from use of caulking, weatherstripping or door weatherstripping
 AirInk™/WeatherGuard™ - Adjustment for air sealing savings to account for prescriptive estimates overestimating savings - 80%
 Net - Net savings rate of weatherization job dependent on input method
 Net - Net savings rate in dollars per year

Climate zone (Tmax, °C)	Altitude _{max} / gusts (m/s)	Altitude _{max} / M	Altitude _{max} / mmHg	Altitude _{max} / ft	Altitude _{max} / h
1 (tropical)	0.00	0.004	9.76	0.14	0.23
2 (tropical)	0.47	0.009	9.13	0.32	0.45
3 (subtropical)	0.93	0.014	8.50	0.50	0.63
4 (temperate)	2.35	0.023	6.85	0.87	0.85
5 (temperate)	4.70	0.037	5.22	1.54	1.25

Item	Quantity
Distributed School Weatherization Kits	0.57
12-Pack of (8) Outer and (8) Switch Foam Gasket Draft Sealers	0.40
Closed Cell Foam Tape Weatherstripping, 17' Roll	0.63
V-Neck-type Weatherstripping, 17' Roll	0.63
Self-Adhesive Door Sweep	0.63
30' Roll of Ridge Caulk	0.67
Direct Install: Batted	1

EEE Kits (Joint)							
Drum Measure Name	Gross 100% Savings Electric	Gross 100% Savings Rail	Gross Therm Savings	Measure Life	Quantity	Climate Zone	
	Resistance	Pump					
12-Pack of 10 Outlet and 10 Switch From Gasket Draft Seals	89.00	29.50	1.80	20.00	12	6 (Average)	
Smart-Cell Exhaust Tube Weatherstripping, 17' Roll	112.75	15.40	0.80	20.00	1	6 (Average)	
32-Seal type Weatherstripping, 17' Roll	112.25	55.40	0.25	20.00	17	6 (Average)	
Self-Adhesive Door Seals	99.00	49.10	5.25	20.00	1	6 (Average)	
10' Roll of Rope Caulk	276.40	89.70	9.35	20.00	20	6 (Average)	
	648.40	137.70	79.20				

Space Heating System	N/A	1) TRM 5.6.1 states that if unknown heating fuel, then 87% natural gas, 13% electric resistance or heat pump.
Electric Resistance	8.45%	2) Calculation assumes 35% Heat Pump and 65% Resistance, which is based upon data from Energy Information Administration, 2008 Residential Energy Consumption Survey, using "HCE-9 Space Heating in Midwest Region.xls", using averages for East North Central Region. Refer to TRM Page 90 Footnotes
Heat Pump	4.55%	
Natural Gas	87.00%	

Chemical Issue	$\Delta \text{NH}_4^+_{\text{total}} / \text{g soil}$	$\Delta \text{NH}_4^+_{\text{total}} / \text{g soil}$	$\Delta \text{NH}_4^+_{\text{total}} / \text{comp}$	$\Delta \text{NH}_4^+_{\text{total}} / \%$	$\Delta \text{NH}_4^+_{\text{total}} / \%$
(City based only)	Electric Resistance	Electric Resistance	Electric Resistance	Electric Resistance	Electric Resistance
4 (biodiesel)	80.9	0	212.4	21.6	14.5
2 (2-propanol)	32.2	3.8	105.3	12.2	7.9
1 (2-propanol)	3.9	0	100.3	9.7	21.3
4 (biodiesel)	7	2.5	124.9	7.7	0
4 (biodiesel)	7.2	2.8	127.9	2.8	9.2
4 (biodiesel)	16.15	2.8	106.3	11.2	3.0

Core size (inches)	SWR _{max} / in soil depth	SWR _{max} / ft soil depth	SWR _{max} / ft soil depth	SWR _{max} / ft soil depth	SWR _{max} / ft soil depth
1 (inch)	5.3	2.3	103.2	5.3	5.3
2 (inch)	5.1	2.0	97.6	5.6	6.5
3 (inch)	4.6	1.7	88.7	6.1	5.6
4 (inch)	3.5	1.5	67.5	7.0	4.0
5 (inch)	3.1	1.3	60.1	7.5	4.0
6 (inch)	3.0	1.2	52.9	7.6	5.0

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[illegible][illegible][illegible]

Line Item	Description	Unit	Quantity	Unit Price	Total Price	Category	Sub-category	Notes
1000	Gas Service Fee	\$/month	12	15.00	180.00	Gas	Service Fee	
1001	Gas Delivery Fee	\$/month	12	15.00	180.00	Gas	Delivery Fee	
1002	Gas Distribution Fee	\$/month	12	15.00	180.00	Gas	Distribution Fee	
1003	Gas Production Fee	\$/month	12	15.00	180.00	Gas	Production Fee	
1004	Gas Processing Fee	\$/month	12	15.00	180.00	Gas	Processing Fee	
1005	Gas Storage Fee	\$/month	12	15.00	180.00	Gas	Storage Fee	
1006	Gas Transportation Fee	\$/month	12	15.00	180.00	Gas	Transportation Fee	
1007	Gas Marketing Fee	\$/month	12	15.00	180.00	Gas	Marketing Fee	
1008	Gas Sales Fee	\$/month	12	15.00	180.00	Gas	Sales Fee	
1009	Gas Refining Fee	\$/month	12	15.00	180.00	Gas	Refining Fee	
1010	Gas Distribution Fee	\$/month	12	15.00	180.00	Gas	Distribution Fee	

Line Item	Description	Unit	Quantity	Unit Price	Total Price	Category	Sub-category	Notes
1011	Gas Service Fee	\$/month	12	15.00	180.00	Gas	Service Fee	
1012	Gas Delivery Fee	\$/month	12	15.00	180.00	Gas	Delivery Fee	
1013	Gas Distribution Fee	\$/month	12	15.00	180.00	Gas	Distribution Fee	
1014	Gas Production Fee	\$/month	12	15.00	180.00	Gas	Production Fee	
1015	Gas Processing Fee	\$/month	12	15.00	180.00	Gas	Processing Fee	
1016	Gas Storage Fee	\$/month	12	15.00	180.00	Gas	Storage Fee	
1017	Gas Transportation Fee	\$/month	12	15.00	180.00	Gas	Transportation Fee	
1018	Gas Marketing Fee	\$/month	12	15.00	180.00	Gas	Marketing Fee	
1019	Gas Sales Fee	\$/month	12	15.00	180.00	Gas	Sales Fee	
1020	Gas Refining Fee	\$/month	12	15.00	180.00	Gas	Refining Fee	

Line Item	Description	Unit	Quantity	Unit Price	Total Price	Category	Sub-category	Notes
1021	Gas Service Fee	\$/month	12	15.00	180.00	Gas	Service Fee	
1022	Gas Delivery Fee	\$/month	12	15.00	180.00	Gas	Delivery Fee	
1023	Gas Distribution Fee	\$/month	12	15.00	180.00	Gas	Distribution Fee	
1024	Gas Production Fee	\$/month	12	15.00	180.00	Gas	Production Fee	
1025	Gas Processing Fee	\$/month	12	15.00	180.00	Gas	Processing Fee	
1026	Gas Storage Fee	\$/month	12	15.00	180.00	Gas	Storage Fee	
1027	Gas Transportation Fee	\$/month	12	15.00	180.00	Gas	Transportation Fee	
1028	Gas Marketing Fee	\$/month	12	15.00	180.00	Gas	Marketing Fee	
1029	Gas Sales Fee	\$/month	12	15.00	180.00	Gas	Sales Fee	
1030	Gas Refining Fee	\$/month	12	15.00	180.00	Gas	Refining Fee	

Line Item	Description	Unit	Quantity	Unit Price	Total Price	Category	Sub-category	Notes
1031	Gas Service Fee	\$/month	12	15.00	180.00	Gas	Service Fee	
1032	Gas Delivery Fee	\$/month	12	15.00	180.00	Gas	Delivery Fee	
1033	Gas Distribution Fee	\$/month	12	15.00	180.00	Gas	Distribution Fee	
1034	Gas Production Fee	\$/month	12	15.00	180.00	Gas	Production Fee	
1035	Gas Processing Fee	\$/month	12	15.00	180.00	Gas	Processing Fee	
1036	Gas Storage Fee	\$/month	12	15.00	180.00	Gas	Storage Fee	
1037	Gas Transportation Fee	\$/month	12	15.00	180.00	Gas	Transportation Fee	
1038	Gas Marketing Fee	\$/month	12	15.00	180.00	Gas	Marketing Fee	
1039	Gas Sales Fee	\$/month	12	15.00	180.00	Gas	Sales Fee	
1040	Gas Refining Fee	\$/month	12	15.00	180.00	Gas	Refining Fee	

Line Item	Description	Unit	Quantity	Unit Price	Total Price	Category	Sub-category	Notes
1041	Gas Service Fee	\$/month	12	15.00	180.00	Gas	Service Fee	
1042	Gas Delivery Fee	\$/month	12	15.00	180.00	Gas	Delivery Fee	
1043	Gas Distribution Fee	\$/month	12	15.00	180.00	Gas	Distribution Fee	
1044	Gas Production Fee	\$/month	12	15.00	180.00	Gas	Production Fee	
1045	Gas Processing Fee	\$/month	12	15.00	180.00	Gas	Processing Fee	
1046	Gas Storage Fee	\$/month	12	15.00	180.00	Gas	Storage Fee	
1047	Gas Transportation Fee	\$/month	12	15.00	180.00	Gas	Transportation Fee	
1048	Gas Marketing Fee	\$/month	12	15.00	180.00	Gas	Marketing Fee	
1049	Gas Sales Fee	\$/month	12	15.00	180.00	Gas	Sales Fee	
1050	Gas Refining Fee	\$/month	12	15.00	180.00	Gas	Refining Fee	

Measure Level Adjustment Table

#	Measure	Short Measure Name	Measure Component	Program Type	Measure Life (Yrs)	Incremental Cost	Building Type	Base Window	Climate Zone	Window Area	CS_cz	CFSP	FUH_cooling	GHS_cz	Annual Savings			Lifetime Savings		
5.6.7.1	Low-E Storm Window - SF	Low-E Storm Window - SF	Shell	RF	20		Single Family	Single Pane Base Window	6 - Nicor Custom	12	0.482	0.68	667.4	0.761				9.13		182.64
5.6.7.2	Low-E Storm Window - MF	Low-E Storm Window - MF	Shell	RF	20		Multifamily	Single Pane Base Window	6 - Nicor Custom	12	0.482	0.68	597.8	0.761				9.13		182.64
5.6.7.3	Low-E Storm Window - SF Joint	Low-E Storm Window - SF Joint	Shell	RF	20		Single Family	Single Pane Base Window	6 - Nicor Custom	12	0.482	0.68	667.4	0.761				9.13		182.64
5.6.7.4	Low-E Storm Window - MF Joint	Low-E Storm Window - MF Joint	Shell	RF	20		Multifamily	Single Pane Base Window	6 - Nicor Custom	12	0.482	0.68	597.8	0.761				9.13		182.64

ELECTRIC ENERGY SAVINGS

$\Delta kWh_{cooling} = cooling + \Delta kWh_{heatingElectric} + \Delta kWh_{heatingGas}$
 $\Delta kWh_{cooling} = CS_{cz} * Area_{window}$
 $\Delta kWh_{heatingElectric} = 365_{yr} * F_{PM} * Area_{window}$
 $\Delta kWh_{heatingGas} = \Delta Therms * F_{PM} * 29.3$
 $kWh_{cooling} = cooling + \Delta kWh_{cooling}$

NATURAL GAS SAVINGS

$\Delta Therms = GHS_{cz} * Area_{window}$

DEFINITION OF BASELINE

The baseline condition is an existing single-pane or double-pane window with clear glass and any frame type: metal, vinyl, or wood.

BASELINE MATERIAL COST

The environmental cost for this measure is \$7.85 per square foot material cost. Applications using professional window installers should include an additional \$30 per window installation cost. Each window is 12 square feet.

COINCIDENCE FACTOR

CFSP Summer System Peak Coincidence Factor for Central A/C (during utility peak hour)
0.68
CFSP Summer System Peak Coincidence Factor for Heat Pumps (during System Peak hour)
0.72
CFPM PPM Summer Peak Coincidence Factor for Central A/C (average during PPM peak period)
0.466

CS_cz Annual cooling savings per area of window by climate zone, see table below.

Climate Zone	Single Pane Base Window (kBtu/yr-ft ²)	Double Pane Base Window (kBtu/yr-ft ²)
1 - Rockford	0.46	0.33
2 - Chicago	0.47	0.35
3 - Springfield	0.49	0.40
4 - Indianapolis	0.49	0.40
5 - Phoenix	0.77	0.59
6 - Nicor Custom	0.482	0.348

Chicago Climate Data, 1981-2010 Normal Conditions		
Rockford	Zone 1	0.3
Chicago	Zone 2	0.6
Springfield	Zone 3	1.1

GHS_cz Annual electric heating savings per area of window by climate zone, see table below.

Climate Zone	Electric Resistance Heat (Based on Electric Furnace)		Electric Heat Pump	
	Single Pane Base Window (kBtu/yr-ft ²)	Double Pane Base Window (kBtu/yr-ft ²)	High-Pass Base Window (kBtu/yr-ft ²)	Double Pane Base Window (kBtu/yr-ft ²)
1 - Rockford	16.94	1.3	0.33	1.35
2 - Chicago	16.99	1.85	0.89	1.7
3 - Springfield	19.29	1.75	1.61	0.85
4 - Indianapolis	20.64	1.12	0.87	0.69
5 - Phoenix	10.82	1.25	0.68	0.87
6 - Nicor Custom	10.69	1.33	0.68	1.00

F_e Furnace Fan energy consumption as a percentage of annual fuel consumption
3.14%

FUH_cooling Full load hours of air conditioning based on climate zone.
Dependent on location

Climate Zone	Single Family	Multifamily
1 - Rockford	1616	2855
2 - Chicago	1925	4027
3 - Springfield	1720	3827
4 - Indianapolis	1780	4027
5 - Phoenix	8224	8824
6 - Nicor Custom	1887.8	3887.8

Table 5.6.7.5-1: Building Energy Utility's (BEU's) estimate of annual cooling and heating energy usage for residential units with 12 sq. ft. windows, assume single-family homes.

GHS_cz Annual gas heating savings per area of window by climate zone, see table below.

Climate Zone	Single Pane Base Window (Therms/yr-ft ²)	Double Pane Base Window (Therms/yr-ft ²)
1 - Rockford	0.38	0.29
2 - Chicago	0.76	0.59
3 - Springfield	0.89	0.68
4 - Indianapolis	0.75	0.59
5 - Phoenix	0.51	0.59
6 - Nicor Custom	0.761	0.598

Advanced Project Analysis															
Project Overview		Material Specifications			Performance Metrics			Financial Summary			Energy Impact				
ID	Measure	Material Type	Material Component	Material Qty (%)	Incremental Cost	Building Type	Base Window	Climate Zone	Window R-Value	Annual Savings	Life Cycle Savings				
P-001	1.0.0.1	High Performance Windows (NC 12 sq ft)	Insulated	NC to TDS	40	\$	60.20	Single Glaze	Single Pane Base Window	6-Northern	12	7.78	1.28	260.20	33.00
	1.0.0.2	High Performance Windows (Single Pane 12 sq ft)	Insulated	TDS	40	\$	60.20	Single Glaze	Single Pane Base Window	6-Northern	12	7.78	1.28	260.20	33.00
	1.0.0.3	High Performance Windows (Single Pane 12 sq ft)	Insulated	TDS	40	\$	60.20	Single Glaze	Single Pane Base Window	6-Northern	12	7.78	1.28	260.20	33.00
	1.0.0.4	High Performance Windows (Double Pane 12 sq ft)	Insulated	TDS	40	\$	60.20	Double Glaze	Double Pane Base Window	6-Northern	12	7.78	1.28	260.20	33.00

$$\Delta T_{\text{thermal}} = H_{\text{ET}} + A_{\text{res, outside}}$$

$$\Delta W/\lambda = \Delta W/\lambda_{\text{outside}} + \Delta W/\lambda_{\text{thermal}} + \Delta W/\lambda_{\text{res}}$$

$$\Delta W/\lambda = C_{\text{ET}} + A_{\text{res, outside}}$$

$$A_{\text{ET}}/(H_{\text{ET}} + A_{\text{res, outside}}) = C_{\text{ET}}/(H_{\text{ET}} + A_{\text{res, outside}})$$

CS₀₁

Area_{windrow}

 ΔW_{react} $FLR_{\text{total},i}$ RS_{eff}

Annual heating, cooling + fan savings per area of window by climate zone, see Tables 5-7. Below

Total area of installed high performance windows, use site specific value

22 Age-Old Window Treat

Climate Zone	NC (DEC10)	NC (DEC 2010)	TEN as BSEP, Single Pane	TEN as BSEP, Triple Pane
1 = Richmond	0.13	0.09	0.03	0.27
2 = Chicago	0.09	0.05	0.05	0.53
3 = Springfield	0.08	0.05	0.03	0.55
4 = Milwaukee	0.13	0.07	0.04	0.89
5 = Atlanta	0.10	0.06	0.05	0.56

Nice Cuts
0.8
0.6
0.4

[3] EnergyPlus modeling performed by Jili Yu and Robert Hart, "2023-07-26 LBNL: Model-NC-TD5-TMfrx.us", "2023-08-04 LBNL: Model-ESP-TMfrx_Double_Pane", "2023-08-30 LBNL: Model-ESP-TMfrx_Single_Pane", Lawrence Berkeley National Laboratory, May 11, 2023. Yu and Hart's energy modeling incorporated the most commonly commercially available windows that met or exceeded the energy performance criteria relevant to each climate zone (CZ). Specifically, the analysts derived energy savings using these specifications for HPVNs: a) Northern CZ, NC/TD5: 10/20/30/SGHG-0.30; b) Northern CZ, RC/ESP: 10/20/SGHG-0.25; c) North-Central CZ, NC/TD5:

Store (H=25/25/45C=0.20 and L=25/25/45C=0)		Climate Zone	Q-Value	SHGC	Prescription or Performance Band
1 - Rockford	Northwest	Climate Zone 6	0.12	0.17	Prescriptive
2 - Chicago			0.20	0.26	Established Energy Performance
3 - Springfield			0.04		
			0.26		
4 - Madison	North Central	Climate Zone 5	0.26	0.40	Prescriptive
5 - Mexico			0.26	0.40	Prescriptive
			0.26	0.40	Prescriptive

II Region City Zone	MCC Climate Zone	W Value	Limit
I = Backford	5	4.0 (80)	New Bedford (1-2018) 35188
I = Chicago			4.0 (80) (MCC 2020)
I = Springfield			
I = Belleville			
I = Belleville	4	4.0 (80) (MCC 2020)	New Bedford (1-2018) 35188
I = Morton			4.0 (80) (MCC 2020)

1. Descriptive name	2. Value	3. Unit
1= Rockford		
2= Chicago		
3= Springfield	0.55	0.40
4= Belleville		
5= Maitland		

U-Value	Source
1	0.76

N. Degree Day Zone	ENERGY STAR Climate Zone	HC or TOL
1 - Rochester 2 - Chicago 3 - Springfield	Northern	\$8.85/ft ²
4 - Belleville 5 - Springfield	North Central	\$2.18/ft ²

IL Degree-Day Zone	ENERGY STAR Climate Zone	ENLP
1 - Rockford 2 - Chicago 3 - Springfield	Northern	\$12.25/m ²
4 - Belleville	North-Central	\$10.68/m ²

[illegible]

IS Regulating Zone	NE (44% SHGC)	NE (44% SHGC)	Yield vs EERAC: Double Pane	EERAC: Single Pane
1-Building	2.70	2.70	0.23	0.47
2-Charge	2.70	2.70	0.00	0.45
3-Separate	2.84	2.84	0.1	0.38
4-Variable	2.84	2.84	0.1	0.42
5-Mixed	2.84	2.84	0.09	0.40

15 Degree-Fahr. Zone	NC (ECC 2010)	NC (ECC 2012)	TDH vs EEMP Single Point	EEMP Single Point
1 - Chicago	2.29	2.52	2.62	29.88
2 - Chicago	2.53	2.82	4.50	27.37
3 - Springfield	2.92	3.25	5.25	25.05
4 - Milwaukee	3.78	4.07	6.38	18.89
5 - Milwaukee	4.58	4.95	8.23	15.65

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Gas Savings Goal for School (Chamber): 200,000 Therms

I agree and thank you for the info. I thought we had a good discussion about this plan for 2004. Since the joint offices were the updated reason to not include the total effectiveness for all spheres provided priority 2003 build and the two recommended options, also, better provided for our 2004 and

THE
Address: 262,070
Number: 2003-204
Phone: 262-204-0040

There is a possibility that we can save from our 2004 expenditure from 2003 to build 2004, but please first use the budgeted amounts above.

ELC
Address: 262,070
Number: 2003-077
Phone: 262-204,0040

Thanks,
Brian

[illegible][illegible]

[Measure Level Adjustment Tab](#)

Non Participant Spillover

Evaluator Net to Gross Recommended

Most Current Nicor Gas Value

Non-Participant Spillover (NPSO)	2025	2026	2027	2028	2029	Gas Source(s) and Discussion
	NTG Value	Fixed NTG Value	Fixed NTG Value	Fixed NTG Value	Fixed NTG Value	
0.048	0.048	0.048	0.048	0.048	0.048	> The objective of the research was to estimate non-income-eligible-residential sector-wide non-participant spillover (NPSO) for Nicor Gas using Illinois TRM version 10 Attachment A, Section 4.1.3 Nonparticipant Spillover Measured from Customers. The study scope was limited to Nicor Gas. The NPSO survey was fielded in August 2022 through an online survey sent to 40,000 randomly selected non-participants identified by analysis of Nicor Gas tracking data. > NPSO savings results based on 4 out of 252 customers passing non-participant screening, Nicor Gas EE offerings awareness confirmation, and measure-specific spillover influence score thresholds from a total of 252 residential non-income-eligible, non-participants. Survey findings were 0.55 therms saved per surveyed non-income-eligible non-participant, applied to 714,849 non-participants in the population. > The 1.048 NPSO NTG rate is a multiplier on residential sector net savings and the NPSO value is not additive to individual program-level NTG values (e.g., a HEER program NTG of 0.84 does not become 0.888). At program year-end, the NPSO multiplier of 1.048 will be multiplied by the sum of the non-income eligible residential sector program-level verified net therms saved, and the resulting net therms will be the total residential sector verified net therms. > Previously researched HEER NPSO values represent high efficiency furnaces and boilers - these measures are not present in the qualifying residential sector NPSO results and are not double-counted. > The values provided here are presented in a memo from Guidehouse: Nicor Gas NPSO Research Results Memo 2022-09-30 Final."

[Net-to-Gross \(NTG\) Framework - Illinois Energy Efficiency Stakeholder Advisory Group](#)[Illinois Energy Efficiency Stakeholder Advisory Group](#)

Measure Level Adjustment Tab

Building Type	Heating EFLH					
	Zone 1 (Rockford)	Zone 2 (Chicago)	Zone 3 (Springfield)	Zone 4 (Belleville)	Zone 5 (Marion)	6 (Nicor Custom)
Assembly	1,787	1,831	1,635	1,089	1,669	1,798
Assisted Living	1,683	1,646	1,446	1,063	1,277	1,637
Auto Dealership	2,981	2,950	2,694	2,368	2,437	2,934
College	1,256	1,293	1,138	1,116	1,131	1,266
Convenience Store	1,481	1,368	1,214	871	973	1,387
Drug Store	2,848	2,947	2,568	2,362	2,516	2,879
Elementary School	1,614	1,603	1,409	1,209	1,269	1,587
Garage	985	969	852	680	752	962
Grocery	1,467	1,551	1,364	1,367	1,375	1,507
Healthcare Clinic	1,446	1,526	1,452	1,553	1,574	1,495
High School	1,807	1,855	1,649	1,591	1,622	1,820
Hospital - CAV no econ	1,216	1,220	1,072	1,001	1,028	1,204
Hospital - CAV econ	1,387	1,398	1,252	1,222	1,269	1,380
Hospital - VAV econ	665	697	628	646	615	681
Hospital - FCU	1,622	1,571	1,374	1,220	1,281	1,567
Hotel/Motel	1,597	1,634	1,468	1,376	1,451	1,606
Hotel/Motel - Common	1,670	1,733	1,549	1,496	1,557	1,696
Hotel/Motel - Guest	1,555	1,597	1,433	1,316	1,400	1,568
Manufacturing Facility	1,048	1,013	939	567	634	1,016
MF - High Rise	1,565	1,540	1,448	1,089	1,125	1,538
MF - High Rise - Common	537	558	501	480	499	546
MF - High Rise - Residential	1,665	1,666	1,512	1,145	1,207	1,650
MF - Mid Rise	1,730	1,782	1,589	1,538	1,560	1,747
Movie Theater	1,916	1,905	1,718	1,288	1,538	1,890
Office - High Rise - CAV no econ	995	1,036	933	786	832	1,013
Office - High Rise - CAV econ	1,001	1,051	929	803	851	1,024
Office - High Rise - VAV econ	1,552	1,432	1,239	1,077	1,098	1,449
Office - High Rise - FCU	1,015	993	899	773	809	990
Office - Low Rise	2,825	2,625	2,365	2,007	2,040	2,659
Office - Mid Rise	1,672	1,629	1,454	1,356	1,399	1,624
Public Sector	2,757	2,670	2,383	2,149	2,186	2,667
Religious Building	1,603	1,504	1,440	1,054	1,205	1,527
Restaurant	1,326	1,328	1,179	1,091	1,122	1,313
Retail - Department Store	1,365	1,322	1,193	1,034	1,088	1,322
Retail - Strip Mall	1,347	1,325	1,183	1,064	1,096	1,317
Warehouse	1,285	1,286	1,180	1,147	1,224	1,275
Unknown	1,709	1,678	1,508	1,287	1,411	1,670
Average	1,567	1,560	1,400	1,224	1,301	1,546

Nicor Custom EFLH Calculations						
	Zone 1 (Rockford)	Zone 2 (Chicago)	Zone 3 (Springfield)	Zone 4 (Belleville)	Zone 5 (Marion)	6 (Nicor Custom)
MF	1,653	1,663	1,516	1,257	1,297	1645.233333
Healthcare	1,337	1,343	1,204	1,118	1,174	1,327
Office	1,510	1,461	1,303	1,134	1,172	1,460

	Zone 1 (Rockford)	Zone 2 (Chicago)	Zone 3 (Springfield)	Zone 4 (Belleville)	Zone 5 (Marion)	6 (Nicor Custom)
Greenhouse						
Greenhouse - w/o curtains	4,320	4,059	3,493	2,996	2,933	4,081
Greenhouse - w curtains	4,344	4,081	3,513	3,012	2,949	4,103

Custom climate zone weights

Rockford	30%
Chicago	60%
Springfield	10%

1 (Rockford)	2
2 (Chicago)	3
3 (Springfield)	4
4 (Belleville)	5
5 (Marion)	6
6 (Nicor Custom)	7

Nicor Custom - Public Sector Buildings							
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
Public Sector Buildings							
College	1,256	1,293	1,138	1,116	1,131		1,266
Elementary School	1,614	1,603	1,409	1,209	1,269		1,587
Healthcare Clinic	1,446	1,526	1,452	1,553	1,574		1,495
High School	1,807	1,855	1,649	1,591	1,622		1,820
Hospital - CAV no econ	1,216	1,220	1,072	1,001	1,028		1,204
Hospital - CAV econ	1,387	1,398	1,252	1,222	1,269		1,380
Hospital - VAV econ	665	697	628	646	615		681
Hospital - FCU	1,622	1,571	1,374	1,220	1,281		1,567
Office - Low Rise	2,825	2,625	2,365	2,007	2,040		2,659
Office - Mid Rise	1,672	1,629	1,454	1,356	1,399		1,624
Public Sector Average	1,551	1,542	1,379	1,292	1,323		1,528

Note: excluded high rise, didn't change the average that much.

Notes

Includes MF High Rise, High Rise Residential, and mid Rise
Includes all Hospital Specifications and Assisted Living and Healthcare Clinic
Includes all office specifications

[Measure Level Adjustment Tab](#)

Illinois TRM 4.4.14 Customized
Business - Pipe Insulation - Dry Cleaners

INPUT
CALCULATED
DEFINED
NOT USED

INPUTS

	Dry Cleaners - High Pressure Steam
Heat Loss from Bare Pipe - Q_{pipe} (Btu/hr/ft)	432
Heat Loss from Insulated Pipe - Q_{inf} (Btu/hr/ft)	70
HOURS	7,752
Efficiency of Boiler (η_{boiler})	79.0%
TRF	0.40

ALGORITHM

Δ therms per foot = $(Q_{pipe} - Q_{inf}) \times TRF \times HOURS / (100,000 \times \eta_{boiler})$

SAVINGS RESULT

Therm savings per foot

14.31

MEASURE VALUES

Indoor - Space Heating

Description	Dry Cleaners - High Pressure Steam
Rebate	
	14.31
Gross Therms	
IMC	
Net to Gross	
Effective Useful Life	15
\$ / Therm	
% IMC	

Notes
From IL TRM for Indoor Insulation High Pressure Steam, Assumes 82.8 Average Steam Pressure
From IL TRM for Indoor Insulation High Pressure Steam, Assumes 82.8 Average Steam Pressure
Operating Hours from Steam Trap TRM Section
Efficiency assumed for steam boilers
Custom calculation based on hours of use during heating season

Thermal Regain Factor Determination			
Pipe Location	Assumed Regain	TRF, Thermal Regain Factor	Weight Based On Hours of Use During Heating Season
Outdoor	0%	100%	0.00%
Indoor, conditioned space	85%	15%	70.24%
Indoor, semi-conditioned, (unconditioned space, with heat transfer to conditioned space. E.g.: boiler room, ceiling plenum, basement, crawlspace, wall)	30%	70%	0.00%
Indoor, unconditioned, (no heat transfer to conditioned space)	0%	100%	29.76%
Location not specified	85%	15%	0.00%

ASSUMPTIONS

Minimum Pipe Diameter is 1"

Minimum indoor piping insulation of 1"

IL TRM TRD				Units MMBtu	
Direct Fired Space Heater				Energy Ending 2018-2023	600
aka HTHV Equipment/Non-Condensing Unit Heaters				Energy Ending 2018-2024	800
				Energy Ending 2018-2025	1312
Size Tiers (MMBtu)					
-800 800-1000 1000+					
INPUTS					
Capacity (MMBtu)	600	800	1000		
Savings Factor (Therms/MMBtu)	4.44	3.89	3.15		
Savings Factor %	0.1244	0.1136	0.0801		
ALGORITHM					
Therms = Capacity * Savings Factor					
SAVINGS RESULT					
Savings (per unit of equipment)				-800 800-1000 1000+	
Savings for Public Sector				4,444.07	3,890.00 3,150.00
MEASURE VALUES					
Description	Size Tiers (MMBtu)			Public Sector	
	-800	800-1000	1000+		
Heater	2,080.31	3,111.18	4,448.12	3,180.11	
Direct Therms	9,176	9,842	13,170	9,706	
Heat loss (Btu/hr)	15	15	15	15	
Effective useful life	22,000	22,000	22,000	22,000	
% MC	0%	0%	0%	0%	
ASSUMPTIONS					
Participation actuals:					
Size (MMBtu)		Participation weight			
250 30%		40%			
400 18%					
800 10%					
1200 11%		29%			
1400 10%					
1800 10%					
2200 9%					
3200 6%					
Research File Location					
C:\MSAS\Steps\1317\EEP Portfolio Planning & Analysis\Portfolio Planning\1317 Simulab\Planning Tools\Measure_Data\Custom TRM V9\Measure Research\LC2\LC data\data_direct_fired_space heater.xls					

Weather Zone Weights	Weather Zone	Series	Input Rating (MMBtu)	Unit Airflow (CFM)	Steam heating		Gas Fired unit heater		Weighted Average Savings Factor (Therms/MMBtu)	
					20%	100%	20%			
					Calculator Savings (Therms) Baseline Equip: Steam	Calculator Savings (Therms) Baseline Equip: Gas Fired Unit	Calculator Savings (Therms) Baseline Equip: RTUs	Savings Factor (Therms/MMBtu) Baseline Equip: Steam		Savings Factor (Therms/MMBtu) Baseline Equip: Gas Fired Unit
30%	Midwest	1800	400	1800	3,120	1,990	1,620	7.86	4.90	4.05
		1800	757	3500	5,200	3,390	2,725	4.80	4.90	4.50
		1800	950	4000	6,280	4,047	3,297	4.62	4.28	3.47
		13200	1200	10351	17,050	4,801	4,801	3.48	4.21	3.51
		10000	1499	8840	9,240	3,966	4,872	4.37	3.98	3.25
		12800	1850	8841	11,100	3,966	5,061	4.50	4.87	3.21
		12200	2200	10385	12,824	4,801	5,887	3.70	3.20	3.80
		13200	2718	12183	14,079	5,234	6,236	3.72	3.09	3.76
		1400	400	1800	2,800	1,824	1,488	7.05	4.72	4.64
		1800	757	3500	4,700	3,008	2,500	5.22	4.66	4.11
60%	Chicago	1800	950	4000	6,683	3,999	3,911	4.90	3.95	3.18
		13200	1200	10351	6,924	4,122	3,696	5.27	3.70	3.08
		13200	1499	8840	8,364	4,262	4,140	5.10	3.64	2.90
		11800	1850	8841	10,048	4,549	5,184	5.49	3.54	2.91
		13200	2200	10385	11,681	7,034	6,251	3.33	3.47	3.56
		13200	2718	12183	14,079	9,234	7,983	3.18	3.30	2.79
		1400	400	1800	2,800	1,824	1,488	6.13	4.87	4.66
		1800	757	3500	4,005	2,605	2,108	5.41	3.51	2.89
		1800	950	4000	4,920	3,213	2,601	5.21	3.95	2.79
		13200	1200	10351	4,824	3,999	3,400	4.80	3.95	2.76
10%	Springfield	1800	1499	8840	7,383	4,307	3,912	4.86	3.18	2.61
		13200	1850	8841	8,731	5,117	4,118	4.72	3.16	2.51
		12200	2200	10385	10,164	6,668	5,300	4.42	3.00	2.50
		13200	2718	12183	12,258	6,995	6,012	4.51	2.90	2.44
		1400	400	1800	2,800	1,824	1,488	6.14	4.87	4.68
		1800	757	3500	4,005	2,605	2,108	5.42	3.40	2.82
		1800	950	4000	4,905	3,209	2,601	5.22	3.40	2.83
		13200	1200	10351	6,038	3,802	3,376	5.03	3.11	2.73
		13200	1499	8840	6,849	4,012	3,612	4.87	3.01	2.61
		13200	1850	8841	8,731	4,773	4,123	4.73	3.12	2.58
	Midwest	13200	2200	10385	10,168	6,132	5,368	4.43	3.00	2.51
		13200	2718	12183	12,285	6,277	6,713	4.32	2.80	2.47
		1400	400	1800	2,800	1,824	1,488	6.15	4.87	4.67
		1800	757	3500	3,649	2,430	2,021	4.82	3.11	2.67
		1800	950	4000	4,408	2,807	2,218	4.40	2.90	2.42
		13200	1200	10351	5,364	3,376	2,988	4.47	3.00	2.49
		13200	1499	8840	6,491	4,132	3,611	4.31	2.80	2.41
		13200	1850	8841	7,789	5,017	4,368	4.21	2.80	2.41
		13200	2200	10385	9,064	5,872	5,082	4.12	2.78	2.31
		13200	2718	12183	10,320	7,039	6,118	4.03	2.70	2.21
	Midwest	1400	400	1800	2,800	1,824	1,488	6.17	4.87	4.69
		1800	757	3500	3,649	2,430	2,021	4.82	3.11	2.67
		1800	950	4000	4,408	2,807	2,218	4.40	2.90	2.42
		13200	1200	10351	5,364	3,376	2,988	4.47	3.00	2.49
		13200	1499	8840	6,491	4,132	3,611	4.31	2.80	2.41
		13200	1850	8841	7,789	5,017	4,368	4.21	2.80	2.41
		13200	2200	10385	9,064	5,872	5,082	4.12	2.78	2.31
		13200	2718	12183	10,320	7,039	6,118	4.03	2.70	2.21
		1400	400	1800	2,800	1,824	1,488	6.17	4.87	4.69
		1800	757	3500	3,649	2,430	2,021	4.82	3.11	2.67

total cost 14468 14468 7040 BMC 3/MMBtu 7.18			S/MMBtu Literature 14,468 Cambridge Actuals 7.04 11,292/7994 4,252/7994		Model # SA 300 SA 350 5,800 5,100 5,100 5,180 5,200 5,100		From Cambridge 12/16 email: unit costs Capacity 250 Cost \$4,001.57 \$4,342.17 \$6,767.84 \$8,880.72 \$10,718.84 \$10,939.04 \$16,488.12 \$16,612.20 \$16,148.10		S/MMBtu \$11.01 \$13.26 \$16.62 \$11.08 \$10.79 \$9.10 \$8.91 \$8.46 \$6.42		Participation weight 9% 18% 10% 19% 11% 10% 10% 6%		\$11.10 11,292/7994	
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Table 16. Payback Analysis for New Construction or Replace-on-Burnout Scenarios					
Timeframe	Incremental Retail Price (\$)	Thermal Savings (\$/yr) @ 50.8\$/MMBtu**	Electric Increase (\$/yr) @ 50.0\$/MMBtu**	Net Savings (\$/yr)	Simple Payback (Yr.)
2013-2014 Season	\$7,426	\$1,438	\$348	\$1,090	6.8
70-Year Average	\$7,426	\$1,272	\$308	\$965	7.7
*Retail price for 4 x 250,000 Btu input units (\$3,437 each, total output 100,000 Btu/hr @ 92% thermal efficiency) from Cambridge Engineering as of Feb 2013. Retail price for standard electric, gas-fired unit heaters estimated at \$7,000 for 4 x 250,000 Btu input units (\$1,750 each, total output of 800,000 Btu/hr @ 80% thermal efficiency from eComfort.com, assumed 5-year life).					
**Fuel cost for natural gas (\$5.8/therm) estimated from past utility bills of host site and electricity cost (\$0.08/kWh) estimated from EIA data for commercial customers in Missouri from February 2014.					

-800	800-1000	1000+	2344	Retailer Gross Therms		Btu (Btu unit cost by MMBtu)	\$/ Therms	% MC
				800-1000	1000+			
2333.3725	4067.48	7265.1331	12200	\$1,500.00	4,867.00	\$6,913.00	50.12	18.8%
1889.7	8013.6	14636		\$1,500.00	7,105.12	\$14,050.00	51.10	19.2%

15	15	15						
0.214708712	0.101400035	0.34891106						
0.128714991	0.168392176	0.168392176						

-800	1000	1000+	1000+	15	1000+	1000+
800-1000	10,100	1000+	1000+	15	1000+	1000+
1000+	10,100	1000+	1000+	15	1000+	1000+

Measure Level Adjustment Tab

Programmable Thermostats, new IL TRM methodology

Customized TRM 4.4.48

Commercial prescriptive and direct install programs - Assign programmable thermostat savings using one weighted average across all building types.

Weighted average savings determined by PYS-2019 participation spread across building types for BEER, Small Business, and Multifamily programs:

Measure	N. Gas Savings (TRM x 100)		PYS-2019 Participation Spread		Weighted Avg Savings	EFLH	Therm Savings	
	Quantity	% of Total	Quantity	% of Total				
Assembly	16	135.8	16	2.09%	181.82	1,831	485	Programmable Thermostat Commercial - Assembly
College	17	135.8	17	2.22%		1,293	135.8	Programmable Thermostat Commercial - College
Convenience Store	3	143.6	3	0.39%		1,368	143.6	Programmable Thermostat Commercial - Convenience Store
Elementary School	10	168.3	10	1.30%		1,601	168.3	Programmable Thermostat Commercial - Elementary School
Garage	18	101.7	18	2.35%		969	101.7	Programmable Thermostat Commercial - Garage
Grocery	2	162.5	2	0.26%		1,551	162.5	Programmable Thermostat Commercial - Grocery
Healthcare Clinic	39	160.2	39	5.08%		1,526	160.2	Programmable Thermostat Commercial - Healthcare Clinic
High School	3	194.8	3	0.39%		1,855	194.8	Programmable Thermostat Commercial - High School
Hotel/Motel	2	171.0	2	0.26%		1,624	171.0	Programmable Thermostat Commercial - Hotel/Motel
Manufacturing Facility	30	106.4	30	3.91%		1,013	106.4	Programmable Thermostat Commercial - Manufacturing Facility
Office - Low Rise	142	275.6	142	18.51%		2,625	275.6	Programmable Thermostat Commercial - Office - Low Rise
Office - Mid Rise	5	171.0	5	0.65%		1,620	171.0	Programmable Thermostat Commercial - Office - Mid Rise
Religious Building	106	157.9	106	13.82%		1,504	157.9	Programmable Thermostat Commercial - Religious Building
Restaurant	20	139.4	20	2.61%		1,328	139.4	Programmable Thermostat Commercial - Restaurant
Retail - Department Store	11	138.8	11	1.49%		1,322	138.8	Programmable Thermostat Commercial - Retail - Department Store
Retail - Strip Mall	33	139.1	33	4.30%		1,325	139.1	Programmable Thermostat Commercial - Retail - Strip Mall
Warehouse	52	135.0	52	6.78%		1,288	135.0	Programmable Thermostat Commercial - Warehouse
Assembly	17	102.1	17	2.22%		1,831	102.1	Programmable Thermostat - Assembly
Garage	24	101.7	24	3.13%		969	101.7	Programmable Thermostats - Garage
Healthcare Clinic	6	160.2	6	0.78%		1,526	160.2	Programmable Thermostats - Healthcare Clinic
Heavy and Light Industry	3	106.4	3	0.39%		1,013	106.4	Programmable Thermostats - Heavy and Light Industry
Hotel/Motel	2	171.0	2	0.26%		1,624	171.0	Programmable Thermostats - Hotel/Motel
Manufacturing Facility	11	106.4	11	1.43%		1,011	106.4	Programmable Thermostats - Manufacturing Facility
Office - Low Rise	53	275.6	53	6.91%		2,625	275.6	Programmable Thermostats - Office - Low Rise
Religious Building	35	157.9	35	4.59%		1,504	157.9	Programmable Thermostats - Religious Building
Restaurant	4	139.4	4	0.52%		1,328	139.4	Programmable Thermostats - Restaurant
Retail - Department Store	2	138.8	2	0.26%		1,322	138.8	Programmable Thermostats - Retail - Department Store
Retail - Strip Mall	10	139.1	10	1.30%		1,325	139.1	Programmable Thermostats - Retail - Strip Mall
Warehouse	19	135.0	19	2.48%		1,286	135.0	Programmable Thermostats - Warehouse
Assisted Living	1	172.8	1	0.13%		1,646	172.8	Programmable Thermostats - CA - Assisted Living
MF - High Rise	4	161.7	4	0.52%		1,540	161.7	Programmable Thermostats - CA - MF - High Rise
MF - High Rise - Residential	1	174.9	1	0.13%		1,666	174.9	Programmable Thermostats - CA - MF - High Rise - Residential
MF - Mid Rise	66	187.1	66	8.60%		1,782	187.1	Programmable Thermostats - CA - MF - Mid Rise

Measure for PYS	N. Gas Savings	Incentive	\$/therm	Incremental Cost - Prescriptive	Measure Life	On-In Cost
Programmable Thermostats	181.82				1	

Algorithm: $\Delta \text{Therms} = ((1 - \% \text{ElectricHeat}) * \text{EFLH} * \text{heat} * \text{Capacity} * \text{VAFUE} * \text{Heating_Reduction} * \text{BAF}) / 100,000 \text{Btu/Therm}$
Where:
Capacity = Nominal Heating Input Capacity(Btu/hr)

Building Type	EFLH (min/24hr)
Assembly	1,831
Assisted Living	1,646
Auto Dealership	2,050
College	1,293
Convenience Store	1,368
Drug Store	2,047
Elementary School	1,601
Garage	969
Grocery	1,551
Healthcare Clinic	1,526
High School	1,855
Hospital - CAV no econ[1]	1,220
Hospital - CAV econ[2]	1,398
Hospital - VAV econ[2]	887
Hospital - F.O.	1,571
Hotel/Motel	1,634
Hotel/Motel - Common	1,138
Hotel/Motel - Guest	1,597
Manufacturing Facility	1,013
MF - High Rise	1,540
MF - High Rise - Common	558
MF - High Rise - Residential	1,666
MF - Mid Rise	1,782
Movie Theater	1,905
Office - High Rise - CAV no econ	1,036
Office - High Rise - CAV econ	2,537
Office - High Rise - VAV econ	1,432
Office - High Rise - F.O.	969
Office - Low Rise	2,625
Office - Mid Rise	1,620
Public Sector	2,670
Religious Building	1,504
Restaurant	1,328
Retail - Department Store	1,322
Retail - Strip Mall	1,325
Warehouse	1,286
Unknown	1,678

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271
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